THE

Gulstonian Lectures

ON

EPILEPSY.

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LECTURE II.—PART II.

I HAVE placed together, in the next group, the bilateral sensations in the limbs and certain general sensations which seem to the patient to be universal. Of the attacks beginning simultaneously in the limbs of both sides, the commencement was in the arms in 11 cases. In 4 it was by a sensation only—numbness, tingling, or pain; in 7, by twitching or cramp, with or without tingling. In most cases the commencement was in the hands as a whole, as might be anticipated from the wide distribution of the discharge. In 12 cases the attacks commenced simultaneously in both legs. In half of these the aura began in the feet, as a tingling, trembling, or creeping sensation. Two of the cases of this group were distinctly due to chronic alcoholism. Aurae referred to the trunk, and not distinctly visceral, are very rare; and the sensation is almost exclusively felt in the back—pain or a sense of trembling in the spine. The frequency with which there are hystero-epileptic convulsions in these cases differs very strikingly according to the seat of the aura. All the cases with a spinal aura were epileptic, and so were almost all those in which the attacks began in both arms, only 1 of 14 having been hystero-epileptic. But of 11 cases in which the aura was referred to the feet, in only 4 could I be certain that the attacks were epileptic; in 3 they were certainly hystero-epileptic, and in 4 their exact character was doubtful.

The other aurae, grouped together as general, tremor, startings, jerkings, malaise, faintness, were described in 51 cases—one-tenth of the whole. General tremor or shivering, present in 13 cases, was associated in 3 with pain in the head. General starts or jerkings, the aura in 10 cases, were never associated with pain in the head. In several of the cases the fits occurred during sleep; the patient was awakened by the starts or jerks, and then passed into the fit. General sensations were described as preceding the attacks in 15 cases: a feeling of general illness or malaise, of general powerlessness, of general heat (in 3 cases), of general cold (in 1 case). A sense of faintness, which the patient could not localise, was the aura in 13 cases, and was associated with sweating in 1 case and with giddiness in 3. Almost all the cases commencing with tremor or starting were purely epileptic; whereas among those which commenced by faintness, one-third, and of those commencing by other general sensations, one-half, were hystero-epileptic.

The next group of aurae are those which I have associated as referable to the region of the pneumogastric nerve, including the respiratory part of the spinal accessory. It is not suggested that they have any special relation to this nerve as such. Some of them begin or pass beyond it, but the pneumogastric is the nerve to the organs in which visceral aurae are most frequent, and the majority of these aurae are confined to its functions. These warnings were described in 106 cases.

The commonest form is the so-called "epigastric aura," a sensation referred to the pit of the stomach, present in one-half (51 cases). In a third of these it was actual pain; in half it was a vague, indescribable sensation; in the remainder it was described as a feeling of "burning," of "coldness," of "trembling," of "something there," or of "winding up." In most cases it was referred to the epigastric region generally; in a few it was a little to the left; in none to the right. In 2 it commenced lower in the abdomen; in several it was referred to both the epigastrium and the lower part of the sternum. Whenever the sensation was actual pain, it remained at the epigastrium until consciousness was lost. In many of the cases in which the sensation was vague, it was described as "rising up through the chest" to the throat or head. The passage to the head was usually followed by immediate loss of consciousness; that to the throat by a sensation of choking. The latter reminds us of the well-known sensation in hysteria, and in many cases of genuine epilepsy the sensation appears to be exactly the same as the globus hystericus. Not only so, but I have seen a case of tumour of the pons in which the epileptiform convulsions commenced with the same sensation, described as a "ball rising up from the stomach to the throat, and stopping the breath."

In 18 cases in which there was no sensation at the epigastrium, the warning was the choking feeling only. In 2 of these there was also coughing. In 7 cases the attacks commenced by some other sensation in the throat. One patient would suddenly exclaim that her throat was sore, grasp it with her hands, and fall in the fit. In 6 cases there was a sensation of dyspnœa or suffocation, referred to the chest and not to the throat. In 5 cases there was some other sensation in the chest, vague in 2, "burning" in 3.

These aurae felt in or ascending to the chest and throat, appear to be the expression of a disturbance in the sensori-motor processes connected with the respiratory function of the pneumogastric. I need hardly remind you that spasmodic actions form part of the normal action of the respiratory centre as they do of no other, and must be reproduced in higher and associated centres. The epigastric pain which remains limited to the epigastrium appears to be related exclusively to the gastric division of the vagus. Accordingly we find that in 14 cases there was described, as part of the aura, another sensation referable to the same function—nausea, evidently such after most careful questioning, and accompanied in several cases by actual retching. In 1 case sudden, intense hunger was described. Other symptoms, often associated with gastric disturbance, accompanied the pneumogastric aura in some cases, as pain in the head and giddiness, the latter especially when there was actual nausea.

Another organ within the innervation of the vagus is the heart, and cardiac sensations constituted the aura in 16 cases, pain in 2, a vague sensation in 3, and palpitation in 11.

Hystero-epileptic attacks occurred in a larger proportion of the cases in this than in any other group—one-fourth. They constituted one-fifth of those with an epigastric aura, or with chest dyspnœa, one-half of those with a throat aura, and one-third of those with a cardiac aura.

The next group comprehends the cases, 90 in number, in which the attacks commenced with a sensation of giddiness, vague or definitely vertiginous, or with the fact of rotation. As a rule, when a sensation merely, the direction could not be ascertained, but of 5 cases the sensation was of turning to the right in 2, and to the left in 3. Of 15 cases with actual rotation, the movement was to the right in 5, and to the left in 10. In nearly all the convulsion was bilateral. In bilateral fits the discharge is never quite equal on the two sides, as proved by the common deviation of the head, and the rotation and vertigo seem to be the expression of this inequality. Almost all the cases were epileptic, one-sixth only being hystero-epileptic. In most consciousness was very easily lost.

Sensations referred to the head preceded the fits in 50 cases. In 21 the sensation was actual pain, mostly general or undefined, in a few frontal, in very few vertical or unilateral. It was rarely associated with any other aura. In 29 cases the sensation was other than pain, usually vague, in a few definite—described as "blood rushing to the head," "coldness," "burning," or a dim sense of heaviness or pressure. In some cases it was associated with distinct vertigo, and in others the cephalic sensation itself was closely allied to vertigo. In one patient, for instance, the sensation was always described as "two circles within the head moving rapidly in opposite directions, and seeming to get alternately nearer and farther off," until consciousness was lost. In one or two cases a cephalic sensation was associated with an auditory aura, in none with a visual sensation. In one-fourth of the cases with this aura the convulsions were hystero-epileptic, and the proportion was nearly the same whether it was a mere sensation or actual pain. Sudden somnolence preceded the fit in 5 cases, all purely epileptic. Sudden inability to speak constituted the warning in 9 cases, of which 2 were hystero-epileptic.

The aura was psychical in 25 cases, an emotion in 10, an idea in 15. The emotional aurae in all took the form of

fear—vague alarm or intense terror. Associations with other auræ were rare, the only combinations being with a sensation in the legs and with pain or other feelings in the head. In no case was it combined with an epigastric sensation. In every case the fits were purely epileptic, although in some they were slight. This is remarkable, since, as we shall see, manifestations of terror are common in hystero-epileptic attacks. The occurrence of this aura bore no relation to fright as a cause of the attacks. Its comparative rarity may excite surprise. No case was reckoned in which the sensation was not mentioned spontaneously by the patient. In most, perhaps in all, cases with a deliberate onset, a natural feeling of alarm is produced by the warning, and if the patient is asked if he has a feeling of fear, he always replies in the affirmative, but this can evidently not be reckoned as a true emotional aura. Of the 15 cases in which the attacks were preceded by a mental state, in 12 they were purely epileptic, in 3 hystero-epileptic symptoms occurred. In most cases no other description of the aura could be given than that "an idea seems to come into the mind." In one case, that just mentioned as commencing by a sensation in the great toe, followed by a desire to micturate and a feeling of turning over and over, this was succeeded by the idea of being in heaven, seeing persons and hearing a question asked. The subsequent fit was certainly epileptic. Several patients described a feeling analogous to that which Dr. Hughlings Jackson has designated "voluminous," apparently similar to that said to be experienced during the act of drowning, a sudden recollection of many past events. Another occasional aura was a sense of strangeness—familiar objects suddenly seemed unfamiliar, and then the attack came on. In one case whatever was taking place before the patient would suddenly seem to be wrong—i. e., morally wrong,—and then he lost consciousness.

The last group of auræ are those referred to the special senses and their organs, which were present in 119 cases. Two-thirds of these (84) were referred to the organ or sense of sight, one-fifth (26) were auditory, 9 olfactory or nasal, and 1 gustatory.

Sensations of smell preceded the fit in 7 cases, all purely epileptic. In most cases the sensation was of an unpleasant smell. One patient described it as a smell like matter; another such as is caused by burning dead bodies; another as like rotten eggs; another compared it to Tonquin beans. The only associations noted were with a visual aura (2 cases) and with a feeling of suffocation (2 cases). A true gustatory aura is among the rarest forms of warning, and was met with in only 1 case. It was described as a taste between sour and bitter, and was referred to the back of the tongue.

The warnings referred to the organs of vision may be divided into five classes: a sensation in the eyeball itself; diplopia; an apparent increase or diminution in the size of objects; loss of sight; distinct visual sensations. A sensation in the eyeball was present in 7 cases, 5 purely epileptic. The eye to which it was referred was in 1 case on the same side as the first motor symptom of the fit; in 1 on the opposite side. It is probable that the centre for common sensation in the eyeball is connected with that for vision. This is suggested by the phenomena of photophobia due to the fifth nerve. In one patient, fits commencing with a pain in the eye were followed by red vision; and in a case of cerebral tumour, presently to be mentioned, a visual sensation and pain in one eye were associated as the aura of the fits. Double vision preceded the attacks in 5 cases. Two were cases of hystero-epilepsy, and the diplopia may have been due to the convergent strabismus so common in hysteroid states. In 2 of the cases, however, the attacks were epileptic. In 1 the diplopia was associated with aching in one eye and an apparent magnification of objects. The apparent increase or diminution in the size of objects is a rare and curious aura. It is apparently connected with increase or diminution in the sensitiveness of the visual centre, which produces the same effect on the consciousness as the stimulation of a larger or smaller area of the retina by a larger or smaller image. Loss of sight preceded loss of consciousness in 26 cases—18 purely epileptic, 4 co-ordinated. It was commonly complete and simultaneous in the two eyes. In 1 case it was said that the sight of the right eye went before the left, followed by rotation of the head to the left. The loss was preceded by a visual sensation in 2 cases, by an auditory sensation in 1, and in 1 case loss of hearing followed the loss of sight. The only frequent associations were with vertigo in 4 cases, and with rotation of the head in 2.

The aura was a distinct visual sensation in no less than 46 cases (35 epileptic, 3 with hystero-epileptic symptoms, 8 doubtful). The sensation in 9 cases was that of light, not colour—sparks, a ball of light, a flash, or a glare. In 17, colours were seen; and 15 patients were able to give some account of the colours. In 7, only one colour was seen, and this was always either red or blue—the former described five times, the latter twice. No other colour was ever seen alone. Combinations described were—red and blue twice; red, blue, and purple once; red, blue, and green once; red and green once; blue, green, and yellow twice; red, blue, and yellow once. Thus not only were red and blue the only colours seen alone, but they were both present in half the cases in which other colours were seen, and in no case were both absent. Taking the cases together, the order of frequency of the several colours is—red (eleven times), blue (eight times), green (three times), yellow (three times), and purple (once). It is evident that this order does not correspond to the physical relations of colour, as shown, for instance, by their grouping in the spectrum; nor does it correspond in any way to the areas of retinal perception. Red, seen most frequently, has one of the smallest retinal fields; but green, seen much less frequently, has a still smaller field; while the field for yellow, seen as rarely as green, is one of the largest, and is nearly the same as the field for blue, which is one of the colours mentioned most frequently. But the order does correspond, not exactly, but in a very suggestive manner, to the degree of visibility of colours. Cohn[1] found that the order in which spots of colour, one millimetre in diameter, can be seen in direct sunlight at different distances is—beginning with that which can be recognised at the greatest distance—red, next blue and green (equal), next yellow, and least violet. This is evidently not far from the order of development in epilepsy.

In 14 cases the aura was a highly specialised visual sensation, a visual idea. In 2 cases this succeeded a simple visual sensation. One patient, in attacks of *petit mal*, first saw a number of red and white dazzling stars, and then an old woman, and other objects which she could not remember. This is of course rather an attack than an aura. But another patient first saw always bright lights—red, green, yellow, and then, the lights continuing, she saw a girl, and tried to get to her to ask what the lights meant, and then fell in the fit. In the first of these cases the less specialised preceded the more specialised sensation, a sequence to which Dr. Jackson has drawn attention, as suggesting that the more special sensation is the result of the loss of control from the discharge causing the less special sensation. But in the second the more and the less specialised sensations occurred together, and in other cases an equally special sensation, a visual idea, constituted the sole warning of the fit, and must be ascribed to the discharge itself. Two patients had visions of an old woman, and in 3 ugly faces were seen, and in 2 "various people;" in 1 "animals." Two patients described an aura consisting of visions of objects and places familiar long ago, a visual sensation analogous to the psychical aura I have mentioned. In one patient the fits were preceded by a vision of "beautiful places, large rooms," &c.

Associations of the visual aura are comparatively rare. In 3 cases the conjoined aura was in the limbs, and, as already mentioned, in all these the aura in the limb commenced by a sensation. One of these was the case in which a flash was seen as soon as a pain, which commenced in the arm, reached the middle of the thigh. When the visual sensation was unilateral the side in several was the same as that on which the limbs were involved. Thus, in 1 case, some fits commenced with the appearance of a blue star before the left eye, which grew larger and larger until consciousness was lost, and other fits began in the left arm, and others in the left leg. In another patient a bright light referred to the right eye was associated with loss of speech. In these cases the sensation may have been rather referable to one side of both fields of vision than to one eye. Epigastric sensations were associated in 3 cases, and in 3 an auditory sensation. The sensations in one patient were very complex and numerous, and, as I shall have to refer to it again, it may be well to relate the case in some detail. The patient was an intelligent man, twenty-six years of age, and all his attacks began in the same manner. First there was a sensation in the left hypochondriac region "like pain with a cramp"; then, this sensation continuing,

[1] Brit. Med. Jour., Oct. 4th, 1879.

a kind of lump seemed to pass up the left side of the chest, with a "thump, thump," and when it reached the upper part of the chest it became a "knocking," which was heard as well as felt. The sensation rose up to the left ear, and then was like the "hissing of a railway engine," and this seemed to "work over his head." Then he suddenly and invariably saw before him an old woman in a brown-stuff dress, who offered him something which had the smell of Tonquin beans. The old woman then disappeared, and two great lights came before him—round lights, side by side, which got nearer and nearer with a jerking motion. When the lights appeared the hissing noise ceased, and he felt a choking sensation in the throat, and lost consciousness in the fit, which, from the description, was undoubtedly epileptic. He had also attacks of *petit mal*, which consisted of a vision of a dull-red ball to the right in the lower part of the field. Thus here we have first a pneumogastric (visceral) sensation which becomes intermitting and sound-like as it ascends towards the ear, until it is finally an intermitting hissing, perhaps the least specialised of all the auditory sensations. This is accompanied by a visual sensation of very high specialisation—a visual idea associated with an olfactory sensation. This gives place to a much less specialised sensation, the two lights, and as the visual centre becomes invaded by this discharge that in the auditory centre ceases. Finally, the aura terminates with the completion of the pneumogastric sensation—a sense of choking. I shall have to refer to this case again in my next lecture, and will now merely point out that the more specialised visual sensation preceded the less special, and therefore cannot have been due to "loss of control" by preceding discharge; it was evidently due to the discharge itself. The phenomenon of *two* lights before the eyes is one of great rarity among the auræ of epilepsy. Lastly, the association of intermission of the sound with a jerking movement of the lights is worth remark. The only autopsy which I believe has been published of a case in which the visual warning existed, is one which I recorded about a year ago. The fits were preceded by a flash of light or pain in the eye, and micropsy, and were due to a tumour in the occipital lobe, which had extended forwards as far as the visual centre in the angular convolution.

To pass to other forms of auditory warnings, noted in 26 cases. In 6 there was an auditory loss, a sudden sense of stillness analogous to the sudden loss of sight already mentioned. In 1 case the two were associated; for a moment all was silent, then all was dark, then consciousness was lost. In a case in which the sensation began in the tongue and passed to the arm and leg, sight was lost after the arm was involved, and hearing after the sensation was felt in the leg. In 1 case some attacks were preceded by an auditory sensation, "singing in the ears," others by an auditory loss.

Auditory sensations preceded the fits in 21 cases. In 4 it was a sensation of an explosion or crash; in other cases the sensations described were the "sound of a drum" (twice), a "whiz" (twice), a "hissing" (twice), a "ringing" (twice), a "rustling," a "rushing sound," and a "sound of thunder." All these may be regarded as the lowest forms of auditory sensation. In 3 cases the sensation was more special—an auditory idea. One patient always heard the words "c-o-n with a con" repeated several times, and then came the fit. In 2 cases music was heard.

The most frequent associations of the auditory aura were with a visual aura (in 7 cases), and an olfactory aura (in 2 cases). In 2 cases it was associated with a sensation beginning in the left hand, and other combinations noted were with auræ beginning in both legs, in both arms, with vertigo, an epigastric sensation, and nausea. In the 3 latter we may trace the normal association of the auditory centre. In several cases in which a visual and auditory aura were combined, the two corresponded in character—i.e., in their degree of specialisation. For instance, one patient described a red light and a rushing sensation like water. The patient who heard the words "c-o-n with a con" saw a girl standing by her who was saying them, and a patient who saw "beautiful places, large rooms, &c.," heard at the same time "beautiful music."

The association of the visual and auditory warnings is well explained by the contiguity of their centres as determined by Ferrier. The angular gyrus, in which is the visual centre, is continuous with the superior temporo-sphenoidal convolution, in which is the auditory centre.

I am aware of no published post mortem of a case in which an auditory aura preceded the fits, but in a case of cerebral tumour of Dr. Hughlings Jackson's (which I had the opportunity of watching with him for some years, and which he kindly permits me to mention), a sound of bells ringing, referred to the left ear, preceded left-sided fits in an early period of the disease. After death we found a tumour outside the opposite optic thalamus. It was extensive, but had evidently commenced between the thalamus and the upper temporo-sphenoidal convolution.

Dr. Hughlings Jackson has suggested that the senses are not equally represented on the two sides of the brain, and that the more special the sense the more unequal is its bilateral representation, the more does it preponderate on the right side. The facts of this series of cases give only a partial support to this view. We have seen that attacks commencing by a sensation in the arm began twice as frequently in the left arm as in the right. Nevertheless, all the cases commencing by a sensation in the tongue were right-sided. In none of the cases with an olfactory aura was there any indication of the side which led in the fit. In most of the cases with an auditory aura the sensation was referred to both ears. In 6 cases, however, it was referred to one ear, twice to the right (left side of brain), and four times to the left (right side of brain). But in 10 cases in which visual sensations commenced the fit, in which there were indications of the leading side, there was no difference between the two, in 5 the fits began on the right, and in 5 on the left side, and we must regard the visual as perhaps the most special of all the senses.

Among the other symptoms of the attacks of epilepsy in this series of cases, time permits me to mention only one or two points. The first of these is that pallor of face, although frequent in the early stage of epileptic fits, is also entirely absent in a considerable number of cases. I have watched many attacks, both slight and severe, in which there has been absolutely no change in the appearance of the face until cyanosis came on from interference with respiration.

A typical fit consists of first tonic and then clonic spasm. It has been customary to separate the periods marked by these two forms of spasms, and assign them to different causes. But close observation will show that there is no abrupt transition from one to the other. The clonic spasm is developed by interruptions in the tonic spasm, and these interruptions may be detected by the hand before they are visible to the eye. The clonic spasm is, indeed, only a condition of tetanus in the physiological sense of the word. Slight intermissions probably exist, but are too frequent to be recognised. As they become less frequent they increase in degree, until they become complete. The muscular contractions are thus separated; as the fit ceases they do not become slighter but less frequent, and the last jerk is often as intense as any which preceded it. In partial epileptiform seizures the spasm is usually clonic throughout, and I have seen, in rare instances, tolerably severe attacks in which all the spasm was clonic. The significance of these facts will be considered in the next lecture. There is one class of epileptic attacks in which there is only tonic spasm—general rigidity. They constitute, however, a special group, and are on the side of epilepsy towards hystero-epilepsy.

In the spasm of an epileptic fit flexion predominates slightly over extension, and more in the distal than in the proximal parts of limbs, at least in the arms. The hands are said to be usually tightly clenched. Sometimes this is the case, but a much more common position is with the wrist strongly flexed, and the fingers in the interosseal position, that is, with the metacarpo-phalangeal joints flexed and the others extended, the thumb being within the fingers, and all close together. It is an exaggeration of the posture seen in tetany.

The cases which present co-ordinated spasm as part of the attack, and which may be somewhat loosely grouped together under the name of hystero-epilepsy, are of much interest on account of their practical importance, and on account of the attention which has lately been directed to them. These forms of attack present many variations, and as seen in this country differ somewhat in their character from that which they present abroad. Attacks of these forms have long been described as hysterical. But their severity, their epileptoid aspect, have led to their being designated by such terms as hystero-epilepsy, hysterical epilepsy, and Dr. W. Roberts has lately proposed to call them hysteroid. They have unquestionably close relations with epilepsy. They own for the most part the same causes, near and remote, are, as we shall see, pathologically connected with epilepsy, and,

as stated in the first lecture, many of them have almost certainly been included in all published statistics of epilepsy. They have also relations with insanity as well as with hysteria in its simpler forms.

The cases which have come under my notice may be grouped into four classes. The first and most frequent is that which resembles the most closely the description of hysteria major given by Charcot. A patient suddenly falls, apparently unconscious, and, sometimes after a brief period of tonic rigidity, sometimes instantly, presents more or less violent co-ordinated movements, extreme opisthotonos, wild movements of the limbs, which are sometimes jerked quickly, regularly or irregularly, more often thrown about. Often the opisthotonos alternates with simple tonic spasm, in which the arms are stretched out at right angles to the trunk, in the attitude designated by Charcot "crucifiement." The eyes converge strongly, or are rolled up, or directed to one side or the other. They never diverge. Often the paroxysms of violent movement alternate with manifestations of the most intense terror. The eyes are fixed on some imaginary object, as with a look of horror the patient half rises or tries to shrink away. In a moment convulsive movements of frenzied intensity succeed. The head is dashed about with such violence as often to inflict serious bruises, and the back is arched with such rapidity and force as almost to make the patient bound off the bed; the attempts to restrain the movements increase their violence. The more restraint used the more is needed, and these are the attacks in which the friends of a patient sometimes tell us that "six persons have to sit on him to keep him down." The violent paroxysms often alternate with periods of tranquillity, in which, however, peculiarities in tone and aspect tell those accustomed to these attacks that the fit is not yet over, and presently a fresh paroxysm of terror or furor comes on, and if not cut short by treatment the condition may go on for hours. The end is usually sudden, often with a deep sigh. These attacks vary infinitely in severity and character. When slight they resemble, and are, indeed, identical with the attacks properly called hysterical. When severe they resemble epileptic mania rather than hysteria, and might indeed be called attacks of compressed mania. In slighter paroxysms the patients may talk wildly. One patient always counted backwards with extreme rapidity. In some cases, especially in children, the patients scream loudly throughout; these are the "screaming fits" of which the friends speak. In severe seizures a curious condition is often observed, which may be called therio-mimicry. The noises and actions of animals are strangely imitated. The patient mews like a cat, or, much more frequently, barks like a dog. This is evidently in part mimetic, although some patients who present the symptom are, in the intervals between the attacks, as far as possible removed from any absurdity. But it seems to be, in part also, the manifestation of some strange animal instinct which we possess in a latent or modified condition, like our canine teeth. A frequent characteristic in the tendency to bite, which may exist apart from any other imitation of animals. It renders the task of attending to these patients in the attacks not wholly devoid of danger. Not only do they bite, but they do so in a curiously animal manner. I have seen a lad of sixteen take the corner of his pillow between his teeth, and shake it exactly as a cat does a mouse, or as the lion shook Livingstone. We are reminded by the barking and biting of some of the symptoms of hydrophobia, and one effect of the poison of rabies in man appears to be to develop a condition identical with hystero-epilepsy, and the convulsions of hydrophobia are always more or less co-ordinated in character. Such symptoms as I have described may probably succeed a true epileptic fit. They may also succeed attacks of *petit mal*. But the co-ordinated convulsion may also, as I have seen, commence in the first moment of the attack. The tonic rigidity, which often initiates these seizures, is different from the condition in a true epileptic fit, although apparently nearly the same as that which Charcot has described as the epileptic stage of these fits.

In women suffering from these attacks I have occasionally found ovarian tenderness, and by ovarian pressure I have often made the patients feel ill, and caused choking sensations in the throat, but I have never succeeded in producing an attack. Nor, of many gentlemen who have practised ovarian compression at the Salpêtrière, and tried it on the hystero-epileptics at Queen-square, has anyone, as far as I am aware, been more successful. Now and then I have arrested a fit by ovarian compression, but the arrest has appeared to be due merely to the pain caused, and not to any special influence, and in such cases the attacks could be cut short much more readily by faradisation of the skin. In one of the most severe cases of hystero-epilepsy which I have seen, Dr. Wilson of Surbiton found that at first ovarian compression had no effect; after many repetitions, in different attacks, it did arrest them, but even then less readily than compression at the epigastric region. Another point of difference from the disease as it occurs abroad is that, in the natives of this country, it is never, so far as I have seen, accompanied by any erotic manifestations. Such attacks occur in girls of any age over seven, in women under forty, in boys not at all rarely, and occasionally in adult men. Some of the severest attacks which I have seen have been in men between twenty and thirty-five. They frequently come on during sleep.

In the co-ordinated attacks just described opisthotonos is frequent. A second variety presents, as its predominant characteristic, spasms of the opposite variety, emprosthotonos. The trunk is flexed, so that the head and thighs are in contact. This form occurs chiefly in boys, and is usually very uniform in its occurrence, all the attacks being similar. One patient, a woman, whose attacks came on in the night, always woke up from sleep with a sensation of this spasm, although there was in reality merely general tonic rigidity.

A third variety presents co-ordinated spasm in the legs of regular rhythm. During the attack the legs are alternately drawn up and pushed down, the patient being commonly on her back. If on the floor she may be gradually propelled, head foremost, from one side of the room to the other. Several cases which I have seen have presented singular uniformity in the character of the spasm. All were females. Identical convulsive movements in the legs have been observed in hydrophobia.

A fourth variety of attack is characterised by extreme difficulty of breathing, not the rapid breathing sometimes observed in hysterical patients, but intense respiratory spasm. They are the "choking fits" of adults. It is no doubt an extreme degree of the disturbance, which in slighter measure causes the globus hystericus. Since this variety is rare, I may describe briefly an example of it. The patient was a quiet, well-conducted girl. She was unconscious of any warning, but an observer could note a slightly frightened expression and restless movement of the eyes just before an attack; then she would suddenly fall, and instantly begin labouring for breath. If placed on a chair, she could sit up, but the agony of dyspnœa was extreme. Her head was thrown back, her mouth half open, her arms held out before her with fingers separated; the muscles of inspiration were thrown into violent action, and a choking noise in the throat accompanied each laboured breath. From time to time there was an ineffectual attempt to swallow, and she would strike the upper part of the chest with violence, as if trying to shake something down. Her face rapidly became flushed, then dusky, and the dyspnœa increased, until she seemed on the point of suffocation. By closing the mouth and nose, and so producing actual apnœa, the spasm could generally be stopped, but her aspect was wild and she spoke strangely, and in a few minutes passed into another similar paroxysm. Even if placed under the influence of chloroform the dyspnœa returned as the effect of the anæsthetic passed away, and if not stopped by means to be described in the next lecture, such attacks would go on for hours. It is instructive to compare the features of such an attack with the other well-known forms of respiratory spasm—the globus hystericus, the epigastric-throat aura of epilepsy, the paroxysms of laryngismus stridulus, and the respiratory spasm, which constitutes so prominent a feature in the symptoms of hydrophobia. The relation which attacks of the co-ordinated class bear to epilepsy and to hysteria is a subject on which various opinions may be and are held, and to which I hope to refer briefly in the next lecture, in considering the pathology of these diseases.

MR. ROBERT MORGAN, Local Government Board Inspector, attended at Penistone on the 10th inst., and took evidence as to the dissolving of three separate local board districts, and merging them in the rural sanitary district of the Penistone Union. The districts are Denby, Gunthwaite, and Hoyland Swaine.

Clinical Lecture
ON A
CASE OF ULCERATIVE ENDOCARDITIS WITH EMBOLISM OF THE BRAIN.

BY HENRY THOMPSON, M.D., F.R.C.P.,
CONSULTING PHYSICIAN TO THE MIDDLESEX HOSPITAL.

MARY T——, aged forty-eight, was admitted under my care July 31st, 1877. I am almost entirely in the dark as to her antecedents. She was unable to tell her own tale coherently, and there was no one to make good the shortcomings of her life history, of which nothing is known except that she denied ever having suffered from acute rheumatism. Respecting her last illness, I am indebted to MR. LENDON for the following notes:—

On the 24th of July the patient complained of pain in the region of the liver and of uneasiness after taking food. On the 28th Mr. Lendon was called to see her at home. She was then complaining of incipient retching and vomiting and of obscure pain felt everywhere, but especially in the stomach and over the left side. Her skin was hot to the touch, her tongue furred, her pulse 120, and her respirations 30. Nothing definite was discovered on examination of the lungs; there was, however, a compound apex murmur, systolic and presystolic, with a concomitant thrill. The abdomen was slightly tender on pressure, but in no degree tense; there was gurgling in the right iliac fossa, but no fever spots existed anywhere; the bowels were relaxed and the motions black, but she had been taking iron; the area of the splenic dulness was decidedly increased, and there was some pain in this region; urine of specific gravity 1024, non-albuminous.

July 29th.—The vomiting has been controlled by bismuth and hydrocyanic acid. Pulse 120; respiration 30; temperature 106. She has been shivering for some time. Wandered during the night, but is quite sensible now. Expectorates a good deal of frothy muco-pus. No fresh physical signs. Appears to be utterly prostrate.

31st.—Pulse 126; respiration 33; temperature 106·8°. Tongue dry and brownish in the centre; bowels still relaxed. Physical signs as before. Received into the Middlesex Hospital this day. On admission, she is described as a dark-complexioned, well-nourished woman, with a pulse of 136, a temperature of 105°, and a breathing-rate of 44. Face flushed, skin hot, tongue moist at the margins, with a foul, dark fur on the dorsum; lips and gums sordid; abdomen slightly swollen, tympanitic, painful in parts and generally tender over the entire surface. The area of the splenic dulness is enlarged, but the spleen itself cannot be felt below the ribs, nor is there any tenderness here. There is, however, tenderness in the right hypochondrium where the liver-dulness falls as far as an inch beneath the ribs in the mammary line. Gurgling may be detected here and there, but it is not limited to the right ilio-cæcal fossa. There are no fever spots. Coarse, sonorous râles may be heard posteriorly, but the percussion note is fairly good everywhere before and behind. Slight occasional cough, but no dilatation of the nostrils. Her whole appearance is one of profound apathy and indifference to her condition; she delivers her answers slowly and with much hesitation; they are not always rational. No motion, no vomiting. At 6.30 P.M. temperature 104·6°, and at midnight 99°; range for the day 7·8°. Ordered a draught containing nitro-hydrochloric acid, also quinine ten grains, to be repeated in twenty minutes; whisky four ounces daily.

August 1st.—Slept well, but perspired profusely throughout the night. This morning she only complains of deafness, which may have been due to the quinine. No action of the bowels. Urine of specific gravity, 1020, non-albuminous. At noon temperature 105·4°, the maximum for the day. She is shivering again, but not violently. She is stupid and will not swallow; she cannot speak so as to be understood; she will, however, make a feeble effort to protrude the tongue when told to do so. Cough on the increase, although it is most abortive and executed with much straining. A compound murmur, chiefly presystolic, may be heard at the heart's apex, accompanied by a thrill. Left face blank; the right lateral furrow deeply indented; tongue deflected to the left. Apparently she possesses slight if any power of movement in the left limbs. Sensibility much impaired over the entire left half of the body, including the trunk. The eyes deviate to the right side. The left cheek bulges during expiration. Ordered tincture of digitalis five minims, with tincture of aconite two minims, every second hour. An ointment containing belladonna and iodide of potassium to be applied to the præcordia. At 4.30 P.M. she was sweating abundantly, and at 7 P.M. the temperature fell to its minimum, 98°, yielding for the day a range of 7·4°. At 9 P.M. she appeared to be more helpless than ever. She tries to speak when spoken to, and to put out the tongue when desired, but cannot accomplish either act.

2nd.—Passed a restless and rambling night. No change in her general aspect this morning. Anæsthesia almost absolute; left conjunctiva impassive to stimuli. Over the entire left half of the scalp, face, neck, chest, abdomen, and limbs, deep punctures may be made with a needle without exciting any evidence of sensation, although the wounds bleed readily. Reflex action, however, may be easily provoked by irritating the sole of the foot. The pupils are about normal in diameter, equal, and equally sensitive to light. The eyes still deviate to the right; she will move them leftwards as far as the median line, but no further. The head also inclines to the right, and cannot be pushed across to the left without producing pain. She will answer questions rationally, and her utterance is fairly distinct, but she is constantly wandering wide of the mark in her speech, and dwelling upon matters foreign to her present circumstances. All her passages are involuntary. Often she beats her chest rapidly with her right hand over the præcordia, but does not appear to suffer from any pain or discomfort there. At 9.30 P.M. pulse 144, respirations 64, temperature 104·2°. She is now perspiring freely, and seems hot and flushed. During sleep both eyes are incompletely shut, the unclosed interval, however, is about the same on the two sides. At 11 P.M. the thermometer reached its maximum point, 104·6°, the minimum for the day being 98·4°; range 6·2°. Ordered solution of iodine to the shaven scalp.

3rd.—Temperature 103·4°, pulse 96, respiration 52. Lies in a state of profound sopor. At twelve noon she is almost comatose, breathing heavily. At 1 P.M. temperature 105·3°. The compound murmur is now chiefly systolic at the apex, where the heart's impulse and the first sound are both strongly expressed. At 3.30 P.M. coarse laryngeal râles may be heard at some distance from the chest; the breathing is more embarrassed, and at times the patient appears to be almost choked. At 4.30 P.M. temperature 103°, pulse 150, respiration 60. At 5.30 P.M. temperature 105·4°, pulse incalculable, respiration 60, shallow, irregular, often coming to a stand-still, interrupted by a fit of choking. At 7 P.M. temperature 106·3°. At midnight it stood at 106·9°, when the pulse marked 160 and the respiration 80. Maximum temperature 106·9°, minimum 101·6°, range 5·3°. Two leeches applied to the right temple; digitalis and aconite omitted.

4th.—At 1 A.M. temperature 107°; at 10 A.M. 105·4°. Wholly unable to swallow; nutritive enemata rejected; coma continues. At 1 P.M. temperature in axilla 107·2°; at 3 P.M. in rectum 109°. She was then dusky and pulseless. At 3.15 P.M. she died, with a temperature in the rectum amounting to 110·4°. Range for the day 5·4°.

After death, at 4.15 P.M., temperature in rectum 109·2°; at 5.15 P.M. 107·2°.

Autopsy. (Abridged from the report of Dr. Coupland.)—Head: There was excess of fluid within the sub-arachnoid cavity. The vessels of the pia mater were full of blood. Lymph was found exuded on the inferior aspect of the cerebellum and at the base of the brain, especially around the chiasma and in the interpeduncular space. The right middle cerebral artery was swollen and plugged from its origin onwards, so that it felt like a piece of cord. From this some black clot extended into the right anterior cerebral artery and into the terminal branches of the middle cerebral trunk. The territory supplied by the plugged vessel was completely softened, so that in raising the brain the organ fell asunder between the optic thalamus and the corpus striatum. The precise limits of the softened mass were not ascertained until vertical sections were made after hardening in spirit. The softening was then found to involve the whole of the corpus striatum in both its nuclei, with

the exception of the lamina presenting in the ventricle. It was found also to involve the island of Reil and the anterior part of the optic thalamus. Moreover, the morbid change spread far into the circumjacent white matter and convolutions, but nowhere was it noticed above the level of the corpus callosum. Posteriorly, only the investment of the optic thalamus was softened, and not the body itself. There were no inflammatory lesions of any moment around the seat of softening, which was grey and curdy.—Thorax: Pericardium natural. Heart flaccid. Both sides, but chiefly the right, full of fluid blood and soft clot. Pulmonary and tricuspid valves normal. Endocardium of left auricle much thickened. Projecting into the auricle a polypoid mass of vegetations sprang from the margins of the mitral valve. Similar excrescences of smaller size occupied the posterior wall of the auricle. All the vegetations were loose and fragile, and in the neighbourhood of one of these a small ulcerated spot was discovered on the posterior cusp. The chordæ tendineæ were greatly thickened, and the apex of the papillary muscle of the septum—the largest of the musculi papillares—was converted into fibrous tissue. The mitral orifice barely admitted the tips of two fingers. Wall of left ventricle mottled and friable. Both lungs highly congested. At their posterior bases they were slate-blue coloured and collapsed.—Abdomen: The spleen measured five inches and a half by three inches and a half. It was pale and soft, and in its upper part presented a small wedge-shaped mass of a yellow colour surrounded by a zone of hæmorrhage. Liver large, dry, and glistening on section; lobulation ill-defined; consistency elastic, not friable. Cortical substance of kidneys swollen and pale, contrasting markedly with the medullary portion, which was congested. Surfaces slightly uneven and soft. No embolus in either organ. The uterus was retroverted.

Gentlemen,—Ulcerative endocarditis is a disease always characterised by enormous overgrowth of valvular vegetations; it has no necessary connexion with coexisting rheumatism, although, as a rule, the heart has suffered already from long-standing unsoundness. Its consequences are embolism or blood-infection, or both together. It is always accompanied by severe constitutional symptoms, usually described as those of intense pyrexia, but often possessing characters of peculiar type, and differing in some respects from the symptoms of violent fever in general. I have said the disease *may* involve blood-infection. In one sense it is always infective, for when the entire blood-stream flows bodily over an ulcerated surface, it can hardly fail to imbibe some taint of corruption, and to develop some degree of the fever of septicæmia. In the higher sense of the term it is not always infective; in other words, it does not always give rise to acute septicæmia, or to gangrene, suppuration, or other form of dangerous and degraded secondary change, for these alone are the proper products of infection, as I should understand it. I am bound, however, to warn you that by many authorities ulcerative and infective endocarditis are regarded as commensurate and synonymous terms. Nor is this all. Pathologists have brought to light the so-called material of infection, the presumed blood-poison itself, in the several shapes of micrococci, vibriones, bacteria, leptothrix-filaments and the like—a motley assemblage of molecular organisms which may be briefly designated microzymes. Clustered around the valves, or imbedded within the coagula of the heart, these infinitesimally small beings drift away in the blood-current along with the detritus of the clot or the vegetation, and either found colonies in emboli of their own making, or else roam at large, in perpetual motion; in either case spoiling the purity of the wholesome blood. This state of things bears the name of "mycosis endocardii." Unfortunately no one can tell where these strange beings are born, whether *within* the heart or *behind* the heart in the course of the circulation, whether they are indigenous or exotic, central or peripheral in origin. Cases are on record which one would unhesitatingly refer to an extraneous source. On the other hand, there are undoubted examples where no distant point of departure was *discovered*, but in this connexion it must be borne in mind that the same thing is true of unequivocal pyæmia. Over and over again, you know, in pyæmia we find no aboriginal focus of infection, whether anything of the kind exist or not. In all my own more recent cases, three in number, post-mortem examination revealed nothing to warrant the assumption of an extraneous source. You cannot fail to see the importance of the question at issue in this matter. Can the heart spontaneously become the hotbed of a living mortal poison, or must it wait until the carriers of the poison are engendered elsewhere, and thence conveyed to the centre in the mature or in the embryonic form through the medium of a morbid lesion, or from first to last by way of the natural pores and passages of the body? The question, you see, most materially concerns the doctrine of abiogenesis, or the generation of life from no-life. In one respect the issue is unimportant. Whether or not the heart be in any sense the native soil of these mysterious molecules, at all events it is said to be a nursery ground wherein they grow, increase, and multiply at a fearful rate. In my own cases I cannot be sure that they had any existence at all during life, although in one they were discovered after death.

(To be concluded.)

A CASE OF MELANOTIC EPITHELIOMA OF THE PENIS; AMPUTATION; REMARKS.[1]

BY A. PEARCE GOULD, M.S., F.R.C.S.,
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FOR the following case I am indebted to Mr. G. Macnamara of Uxbridge, who kindly placed the patient under my care while I had the charge of Mr. C. Macnamara's wards in July last:—

Ed. R——, aged seventy-five, labourer, a thin old-looking man, stated that he had enjoyed good health and noticed nothing wrong with his penis till about five years before, when a small black spot appeared on the glans penis. It gradually increased in size, and lately other similar growths had sprung up around the first. For a few months past he had experienced difficulty and pain in micturition, but with this exception had been free from pain; there had been no hæmorrhage. No history of cancer or tumour in the family.

On admission the penis presented four or five raised black nodules the size of peas, ranged along the corona, while further forward on the dorsum of the glans was a much larger black fungating mass which quite obscured the glans. Two or three smaller tumours of the same colour were seen higher up the penis, not projecting from the surface. There was no enlargement of the inguinal or lumbar glands; no evidence of any growth in the lungs. Thickly scattered over the man's back were a number of pendulous warts and little molluscous tumours, nearly all of which were deeply pigmented if not quite black; these, the man stated, had existed all his life.

On July 9th, ether having been given, I amputated the penis. Drawing the skin well forwards I ligatured the organ as tightly as possible close to the pubes, and then passed a metallic bougie along the urethra as far as the ligature. Transfixing the penis close to the ligature above the urethra, which was stretched over the bougie, I cut forwards for about an inch, and then, after withdrawing the bougie, cut out through the urethra. I then placed the loop of a wire écraseur round the corpora cavernosa and severed them. Slitting up the flap of urethra along the *floor*, I turned it up over the face of the corpora cavernosa and stitched it in position. There was a little bleeding from the angle between the urethra and the corpora cavernosa, which was easily stopped by the thermo cautery. The man was almost entirely free from pain during convalescence, his only trouble being retention of urine, which necessitated the use of the catheter for ten days. He left the hospital well on July 29th, and continues well up to the present time.

1. The first point of interest in this case is the *nature of the growth*. *A priori* reasoning did not help much in determining this question, for while very nearly all melanotic tumours are sarcomata, the form of malignant growth met with most often on the penis is epithelioma, and the man's age and the presence of the warty growths on the back further increased the probability of its being of this nature; but again the absence of any apparent lymphatic affection after five years' growth was unusual in cancer of the penis. The bulk of the tumour was so friable that it was impossible to prepare it for the microscope, but my friend Dr. Heneage Gibbes has prepared sections of the more superficial parts,

[1] Read before the Medical Society of London, March 1st, 1880.

which show well its structure and mode of growth. (Several specimens were exhibited at the meeting.)

Looking at the surface of the growth, the superficial epithelium is seen to send down processes, some of them very large, which penetrate a considerable distance into the deeper tissue. At their lower or deeper end some of these processes become more or less pigmented, and in places the pigmented tissue reaches almost to the surface. The deep ends of these processes are evidently in an active state of germination, for they stain with hæmatoxylin more deeply than the rest, and many cells are seen to be vacuolated. Dr. Gibbes examined this part under a high power, and found many nuclei convoluted and in an active state of division. Some of these processes can be seen to break up into more slender processes of similar cells, becoming less flattened and more pigmented, like those forming the bulk of the tumour. The continuity of the pigmented tissue with these ingrowths of epithelium can thus be traced. Groups of cells with a concentric arrangement can here and there be traced, but they are not numerous, while in some of the deeper and more pigmented parts, what look like broken-down blackish "nests" are found. Between the epithelial ingrowths a small cell or fine fibrous growth exists. The pigment consists of fine brown granules, some of which is between the cells, others again filling the cells, and some in irregular, apparently non-cellular masses. The pigmentation can be readily traced to begin around and spread from the bloodvessels. The deeper parts of the sections show nothing but a pigmented granulated débris. Several large lymphatics are met with in the sections.

In his lectures on Surgical Pathology (third edition, page 722), Sir J. Paget states that he has "once met with a melanotic epithelial cancer. It grew in the deeper part of the cutis and in the subcutaneous tissue, under a dark pigmentary nævus or mole, in a woman who had many similar moles on various parts of her body. A thin layer of the cutis, with its covering of dark epidermis, extended over the cancer, and was slightly raised by it. The epithelial shape and texture of the cancer-cells were well marked, but most of them contained melanotic matter. In some a quantity of brownish molecular matter was either diffused or collected about the nucleus or its place. In some, with similar molecular matter, there were two, three, or more brown corpuscles, from the size of mere molecules to that of blood-cells. Materials like these within the epithelial cells existed, also, more abundantly as an intercellular substance." This case is especially interesting, as it appears to have so closely resembled mine in the development of pigmented warts or moles in other parts of the body. Other pigmented true carcinomata have been met with. Thus Mr. Nettleship (Path. Soc. Trans., xxix., p. 233) mentions in the description of a carcinoma of the orbit that "pigment-granular degeneration" was going on in different degrees in the several growths; to a large amount in one of the growths. Billroth, in his Surgical Pathology and Therapeutics, writes: "Some carcinomata are brown or black, but still melano-carcinomata are rare. Most soft melanomata are sarcomata." Cornil and Ranvier (Manual of Pathological Histology) mention a melanotic variety of carcinoma, and state that "it is much rarer than melanotic sarcoma." Such are the few scant references to melanotic cancers in our text-books; in none of them can I find a detailed description of a melanoid epithelioma.

The fact that the superficial epithelium can be traced growing down and becoming pigmented and continuous with the tissue of the deeper parts of the tumour determines that this growth is an epithelioma. As already mentioned, the association of epithelioma with warty growths is a well observed fact. This tumour has clinical as well as pathological peculiarities. The first is its benign character; it had existed five years without any sign of lymphatic injection or secondary growth. Epithelioma of the penis usually injects the inguinal glands early, and runs a rapid course if not checked by early amputation. And the common melanotic tumours, the sarcomata, diffuse themselves very rapidly and widely over the body. In connexion with the pigmentation it may be well to notice that the skin of the penis is normally darker than that of the trunk generally, while the fact that most of the warts on his back were brown or black showed that there was a general tendency to pigmentary degeneration of epithelium in this man. And indeed I am inclined to look upon the pigmentation as a real degeneration, for soon after the cells become pigmented they break up entirely into a granular débris, and several "nests" were seen undergoing the same degeneration. May not this account for its benign character? Mr. Nettleship's case, already mentioned, was remarkable for the length of time between the recurrences—five and fourteen years. Mr. T. Holmes has described a case of melanosis of the penis in which the urethra is the part mainly affected; the specimen is in the St. George's Hospital Museum, and is figured in his smaller work on Surgery; in structure, however, it is sarcomatous.

2. *The methods of amputation* usually adopted are removal by a single circular sweep of a knife, or by an écraseur, or by the method I employed, which was, I believe, introduced by the late Mr. Hilton. The first is the simpler plan, but the hæmorrhage may be troublesome, and was carefully to be avoided in operating upon such an old and infirm patient as mine. The resulting cicatrix involving the urethra usually produces a very troublesome stricture of its orifice. The écraseur prevents all hæmorrhage, but not the subsequent stricture, which is likely to be very severe if the galvanic écraseur be used. Hilton's plan is easy of performance, for the outline of the urethra is very evident when that tube is stretched over a bougie, and thoroughly prevents any stricture, while if the penis proper be divided with a wire écraseur, all hæmorrhage is also obviated, and the flap of the urethra folded up over the face of the stump unites very readily and quickly with the corpora cavernosa. Whatever method be employed it is necessary to remove a good deal of skin, and for this purpose to draw upon the skin before making the section, for if not the penis retracts under the pubes at the bottom of a funnel of skin, and is dealt with with difficulty.

A CONTRIBUTION TO CLINICAL HÆMOMETRY.

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(Concluded from p. 399.)

B. CHRONIC DISEASES.

Diabetes Mellitus. — I. William T——, aged thirty-four. First symptoms noticed two months before admission. Thirst, increasing weakness, loss of flesh, constipation, dry skin, frequent micturition. No fever. Pulse 60. Urine: eight to ten pints per diem; sp. gr. 1040; sugar abundant.

Obs. 22. Three days after admission.

N=6,240,000; G=0·65.

Obs. 23. Fifteen days later. Has been improving on a suitable dietary, with an occasional purgative.

N=5,770,000; G=0·49.

II. Sarah K——. First symptoms noticed one month before admission. Dry skin. Constipation. Urine saccharine; ten to twelve pints; sp. gr. 1040.

Obs. 24. Four days after admission.

N=7,540,000; G=0·54.

In both of these cases a decided excess of red corpuscles was observed; and though their individual value was low, it was not sufficiently low to balance the increase in their number. The result is such as might have been expected. The copious flow of water through the kidneys would tend to lessen the proportion of fluid in the blood, and thus to make it appear richer in formed constituents. Previous observers have arrived at very contradictory results in this disease, finding the blood sometimes much richer, sometimes much poorer, both in corpuscles and hæmoglobin. These discrepancies may possibly be due to the blood having been examined at different stages in the course of the malady. At an early period, when the loss of water is very great and the general health continues good, we might anticipate a relative hypercytosis and hyperchrosis; later, when pulmonary or other complications had undermined the en-

tire fabric of the constitution, we might expect to find the red corpuscles diminished both in number and in value.

Internal Cancer. — I. George A——, aged fifty-nine. Intrathoracic cancer, with effusion of sanguinolent serum into left pleural sac. Scirrhous nodules in skin over epigastrium; corresponding axillary glands much enlarged. No hæmoptysis. Thin and somewhat cachectic in appearance. Chief complaint is of dyspnœa. No fever. Duration of disease before admission about six months.

Obs. 25. On admission. N=5,740,000; G=0·66.

Obs. 26. Two weeks later. N=4,230,000; G=1·00.

II.—George H——, aged thirty. Carcinoma of liver, pancreas, mediastinal and lumbar glands. Very rapid course. First symptoms noticed three weeks before admission. Extreme marasmus, with slight jaundice of skin and conjunctivæ; anorexia; constipation. No sweating. Death five days after admission.

Obs. 27. N=4,590,000; G=0·5.

The above results, not unnaturally, excited some surprise, being diametrically opposed to those arrived at by Leichtenstern, Malassez, and others, as well as to our own anticipations. Previous observers have invariably found a rapid and considerable fall, both in the number of corpuscles and in the hæmoglobin, to be associated with the development of cancer in internal parts. When the disease gives rise to hæmorrhage, this will, of course, modify the composition of the blood directly. It is plain, however, that the most extreme cachexia from the rapid development of malignant disease need not of necessity entail any marked impoverishment of the blood—at any rate, as regards its most important constituent. In our two cases, if this was indeed reduced in amount, its reduction must have been accompanied by a proportionate diminution in the fluid part of the circulating medium.

Graves' Disease.—Ellen L——, aged seventeen. Characteristic symptoms first noticed three months before admission. Amenorrhœa six months. Severe palpitation with occasional throbbing headache and vertigo. Pulse 136; no fever. No exophthalmos. Heart's action excited with systolic blowing murmur over præcordia.

Obs. 28. Fourth day after admission.

N=6,170,000; G=0·44.

Chronic Gout; Kidneys affected.—Agnes H——, aged forty-two. Began in right great toe nine years ago; recurred annually for six years; during last three years has hardly passed a month without a paroxysmal exacerbation. Many joints involved. Chalk-stones about finger-joints and in pinnæ. Urine pale, sp. gr. 1011, albumen $\frac{1}{10}$. No other complications. Febrile movement insignificant.

Obs. 29. Eighth day after admission.

N=5,160,000; G=0·58.

Chronic Renal Disease; Hæmorrhages; Uræmic Symptoms John S——, aged twenty-nine; intemperate; jaundice three years ago; cough, dyspnœa, œdema of extremities, six weeks; free epistaxis on two occasions during week previous to admission; slight anasarca; subnormal temperature; full, throbbing pulse; headache; sleeplessness; subsultus; urine pale, sp. gr. 1010, albumen $\frac{1}{4}$; slight dulness and crepitation over left apex; trifling hæmoptysis; gums grew spongy and bled. Died four weeks after admission.

Obs. 30. Ten days before death. N=1,940,000; G=0·39.

In three cases of Bright's disease examined by Leichtenstern, a decided diminution in the amount of hæmoglobin was observed. This was most marked in a case of granular atrophy of the kidneys. The second of our observations illustrates an extreme form of the anæmia which may result from this affection.

Cardiac Disease.—Eliza P——, aged twenty. Has suffered from heart-symptoms occasionally for years. No history of rheumatism. Seven months ago had œdema of feet and slight hæmoptysis. On admission: very pale; loud mitral murmur with a systolic hæmic bruit at the base and venous hum in the neck. No fever or albuminuria. No pulmonary complications or dropsy.

Obs. 31. Six days after admission.

N=2,790,000; G=0·36.

Obs. 32. Nineteen days after admission.

N=5,050,000; G=0·51.

During her stay in the hospital she took iron.

The mere existence of valvular insufficiency does not necessarily entail impoverishment of the blood. The complete filiation of the *anémie cardiaque*, described as a special form of anæmia by some French writers, is still unknown. It is usually associated with mitral regurgitation and dilatation of the heart in young subjects. Mechanical interference with the circulation will not account for it; indeed, some observers go so far as to say that a high degree of stasis in the venous system is associated with hypercytosis and hyperchrosis. That this is not always so has been proved by Leichtenstern. He examined the blood in two cases of anasarca with cyanosis due to cardiac failure and found it decidedly poorer in hæmoglobin than normal blood.

C. STATES IN WHICH THE BLOOD IS EITHER THE PRIMARY SEAT OF THE MORBID PROCESS, OR, AT ANY RATE, THE THEATRE OF ITS MOST CONSPICUOUS MANIFESTATIONS.

Anæmia after Hæmorrhage. — I. Eliza B——, aged fifty. Symptoms of gastric ulcer for two years. Sudden faintness, followed by profuse hæmatemesis (two quarts?); subsequent melæna. Six days later, when admitted, very pale, with bloodless lips. Blowing murmur over heart. Pulse 80, small and compressible; temperature normal. Bowels confined.

Obs. 33. Eleven days after the hæmorrhage, and six after beginning iron: N=3,130,000; G=0·54.

II. Fredk. L——, aged forty-five. Sixteen months ago, after suffering for some time from gastric symptoms, he vomited a large quantity of blood. The bleeding was followed by delirium and great weakness. He has vomited blood more than once since then, but the loss has never been so great as it was on the first occasion. For five months the hæmatemesis has not recurred. On admission, very pale, with paroxysmal gastralgia; no fever; no albuminuria.

Obs. 34. On admission: N=4,330,000; G=0·26.

Obs. 35. One month later. Has been taking iron for sixteen days. N=6,960,000; G=0·33.

Although anæmia, from loss of blood, is the simplest—the most typical—form of that condition, our information respecting it is still far from complete. If the above observations are to be trusted, hypochrosis occurs as well as hypocytosis; possibly, however, as a secondary result of the impairment of the nutritive functions due to the removal of a large proportion of corpuscular elements from the blood. In the order of recovery, the hypocytosis apparently takes precedence of the hypochrosis. A series of observations on the state of the blood after accidental hæmorrhage from wounds in perfectly healthy individuals is greatly wanted. The researches hitherto made (chiefly in reference to the practice of venesection) are not of a kind to be utilised for our present object.

Simple Anæmia.—Lavinia H——, aged twelve. Symptoms ascribed to overwork at school. Had been taking medicine (probably iron) for six weeks before her admission.

Obs. 36. Seven days after admission:

N=4,940,000; G=0·35.

Chlorosis. — I. Rose C——, aged twenty. Catamenia always scanty; occasionally absent. Aspect chlorotic. Aggravation of all symptoms during the last four months. Anorexia; constipation. No symptoms of gastric ulcer or other complications. Hæmic murmurs over heart; venous hum in neck. No fever. Has not taken any medicine for six or eight weeks.

Obs. 37. Four days after admission:

N=4,460,000; G=0·29.

Obs. 38. Seventeen days after admission: Feels much stronger, though there is no marked improvement in her colour. Cardiac murmurs inaudible. Has been taking one to two drachms of the so-called dialysed iron daily, with an occasional aloetic pill. N=4,370,000; G=0·43.

II. Eliza D——, aged nineteen. Amenorrhœa two months. Always pale; has grown much paler of late. During the past month has suffered from œdema of the extremities, feebleness of voice, and dyspnœa on exertion. Aspect characteristic. Mucous membranes blanched; systolic murmur over præcordia; venous hum in jugulars. No organic mischief in lungs, kidneys, or elsewhere. Temperature 98°; pulse 84; respiration 18.

Obs. 39. Six days after admission:

N=2,510,000; G=0·45.

Obs. 40. Fourteen days after admission:

N=3,600,000; G=0·34.

Obs. 41. Five weeks after admission:

N=5,150,000; G=0·28.

During her stay in the hospital the improvement in her symptoms was rapid and decided. She took twenty minims of dialysed iron four times a day.

III. Annie R——, aged twenty-one, has been gradually getting pale and weak for two years. Menses very scanty, but not suppressed. No organic disease. Aspect chlorotic; occasional dyspnœa and palpitation; systolic murmur over heart, and venous hum in neck. No fever.

Obs. 42. Five days after admission.

N=4,130,000; G=0·28.

Obs. 43. Fourteen days after admission.

N=5,990,000; G=0·37.

The improvement in her appearance and symptoms was striking and rapid. She was treated with Blaud's pills (sulphate of iron and bicarbonate of potash).

These few observations quite bear out Duncan's statement as to the lack of agreement between the hypocytosis and the hypochrosis in chlorotic anæmia. The two coexist, but their proportion to each other is variable and uncertain. This want of harmony between them is especially marked during convalescence under iron. The influence of the remedy appears to be exerted in the first place on the number of the corpuscles, while their functional value remains at its original level, or may even sink below it (Obs. 39 to 41). The numerical increase proceeds very rapidly at first, and then more slowly; at this stage the corpuscles begin to grow richer in hæmoglobin. Substantially the same result was arrived at by Dr. Gowers in two very interesting cases of anæmia in young women, in which the corpuscles were repeatedly counted while iron was being administered (*Practitioner*, July, 1878). He points out that the "primary effect of the administration of iron may be an increase in the globules out of all proportion to the increase in the hæmoglobin, and that the rise in the latter may be accompanied by an actual decrease in the number of globules." These results are especially noteworthy in the face of the very different conclusions at which both Hayem and Malassez have arrived on this subject. The former, after asserting that "in chronic anæmia of whatever kind there is always a want of agreement between the number of the coloured elements and the colouring power of the blood, the latter being more invalidated than the former," goes on to lay it down as a general principle that the action of iron is the same in all forms of anæmia, whether curable or incurable; "it always augments the richness of the corpuscles in hæmoglobin, but their number does not follow a parallel course; it varies but little, and not unfrequently undergoes actual diminution." In another place he alludes to a fatal case of progressive anæmia, in which the number of red corpuscles had fallen as low as 414,062 per cubic millimetre, their individual value being also much reduced. Under iron these elements actually grew much richer than in health, attaining the extraordinary value of 1·34; but their number steadily continued to decrease until it reached a point no longer compatible with life. Malassez tells of a case of anæmia (due either to lead-poisoning or to visceral cancer) in which the administration of iron was followed by an increase in both the number and the value of the corpuscles; but their value rose much more quickly than their number. When the medicine was stopped both elements began to sink, but the colouring power of the blood sank faster than its globular richness.

It is hard to reconcile these contradictory results. It may be that there exists a fundamental distinction between different forms of anæmia in their relation to iron, the metal influencing the hypocytosis primarily in one set of cases, while its primary effect is on the hypochrosis in another. But the time is not ripe for even a provisional hypothesis. More facts are needed. A comparative study of the blood in cases of chlorosis, progressive idiopathic anæmia, Addison's disease, and malarial anæmia, would probably throw much light on the question. As regards chlorosis, all that we are at present justified in asserting is, that the normal ratio between the number of the corpuscles and their functional value ceases to be maintained; that while hypocytosis and hypochrosis coexist the latter is always in excess of the former; that under the influence of iron the increase in the number of corpuscles usually precedes the increase in their individual value, though both factors are affected by the remedy. It is interesting to note that the patient's symptoms are always relieved when the number of corpuscles attains its normal level, even though their individual value show no corresponding improvement. This is what might have been expected. The addition of a certain quantity of hæmoglobin to the circulating fluid will clearly be more useful to the organism if it be distributed among a larger than if it be concentrated in a smaller number of elements. The former arrangement, by offering greater facilities for the transfer of oxygen, will be the more economical of the two.

As regards diagnosis, the numeration of the corpuscles in conjunction with chromometry may be of service in chlorosis in more than one way. It may enable us to recognise the first beginnings of the malady, before its presence is suggested by visible changes in the colour of the skin and mucous membranes. Again, it may serve to distinguish cases of unusual pallor in young women, without any actual lessening either of the corpuscles or the hæmoglobin, from true anæmia. In such cases the routine administration of chalybeates is not merely useless, it is positively injurious, giving rise to headache, digestive disturbance, and other undesirable symptoms.

VIVISECTION, AND ITS USE IN THERAPEUTICS AND HYGIENE.[1]

BY DR. CH. RICHET (PARIS).

IT is often of advantage to reopen questions which are practically settled; for although with the majority of medical men the utility of vivisection is thoroughly admitted, yet by a section of the public, and especially the English public, it is held to be not only cruel but useless. We shall not consider the question of cruelty, but simply discuss the advantages that have been gained for man by animal vivisection. We desire to judge vivisection by its practical results. Science has different ends from medicine. Medicine aims at curing disease; physiology at learning function. The former seeks to allay pain or ward off death; the latter to unravel the innumerable mysteries of nature. Because a discovery cannot be turned to direct profit in the art of healing, it is not the less important. It is as if a mathematician, before solving a problem, were to ask himself what gain he would have by knowing its solution. Someone has wittily said that the composition of a new dish is of more value than the discovery of a star. But such witticism must not be seriously taken. The end of science is truth, and it is quite legitimate to conclude that vivisection is justified if by it we know more of the function of an organ. Apart from this, let us see what are its useful and practical results. Have we gained by experiment the means of curing one or two diseases of man or of assuaging pain? If this can be answered in the affirmative, then vivisection is absolutely lawful. The partisans of *humanity* in science should acknowledge that the pain of man is a greater ill than that of an animal, and that we should not hesitate to inflict suffering on dogs or frogs if thereby we can save the life of one human being or relieve his sufferings.

The first place must be given to the discovery of the *circulation* of the blood. Galen, who made many experiments on animals, was the first to demonstrate that the arteries contained blood. He laid bare the artery of a living animal, and intercepted the blood-flow in its course by means of two ligatures placed a short distance apart, and then, opening the artery, found blood, and not air, as Eristratus taught, filling the vessel in the included portion. Harvey, taking up and working out the grand idea of Michael Servetus, established by irrefutable experiments the fact of the circulation, and he begins (chap. i. and ii.) by speaking of the experiments he had made on animals. He opened the chest of living animals, cut into the pericardium and saw the heart contract, in warm as well as in cold-blooded animals—serpents, frogs, toads, snails, crabs, &c. He also observed what takes place in the arteries and veins going to the heart. These admirable experiments established the theory of the circulation, which is now uncontested and incontestable. It was not by observations on the anatomy of the veins or the examination of cardiac ectopia (as in the case of Count Montgomery), but by experiments on dogs, frogs, serpents, and fish, that he discovered the way in which the blood goes

[1] This is a full and careful summary of a paper contributed specially to our columns by M. Richet.

to and returns from the heart. It would be absurd to discuss the question that this discovery is without importance in therapeutics. There is no physician or surgeon who does not avail himself of the knowledge of this fact in observing morbid phenomena, and in applying his remedies.

A certain number of people die from loss of blood—on the battle-field, after operations, after parturition, and to save them transfusion is necessary. Lower in 1664 first showed that this could be done with impunity. His experiments on the dog were repeated by Denis, and the results he gained by vivisection led him to make attempts on man. It has taken its place in therapeutics, and has saved many lives. It will save many more. Experiment alone will teach us precisely what quantity of blood is necessary and what is harmful; and if over-sensitiveness forbids animal suffering for this end, then the experiments would have to be made on human beings.

One of the most poisonous of gases is carbonic oxide. It is evolved by burning charcoal in a confined space. The mode of death from its inhalation has been known only through vivisection. Oraja, Portal, and Claude Bernard have shown that carbonic oxide combines with the red corpuscles and renders them unfit to absorb oxygen; and the therapeutical bearing of this is, the avoidance of conditions leading to its inhalation, and the attempt at prevention of death in one poisoned by it by means of artificial respiration, the inhalation of oxygen, and transfusion of blood.

In *respiration* great discoveries were made through vivisection by Lavoisier, Regnault, Reiset, Claude Bernard, and Paul Bert, who have in succession shown that death may take place, either from deficiency of oxygen or excess of carbonic acid. The amount of carbonic acid in the atmosphere that is fatal has been estimated. Are such researches without value for the life of man? Next to man himself, the question can only be solved by experiments on animals. All that we know in hygiene of the quantity of air necessary to support life is the result of experiments on dogs and rabbits. Sometimes a precise knowledge of the conditions of respiration has served to prevent men from perishing. Paul Bert has shown that an animal suddenly transferred from compressed air to the open dies rapidly from the sudden liberation of gases in the blood. Men who work under water at great depths should therefore be brought up very slowly, and similarly certain accidents to aeronauts may be avoided by the inhalation of oxygen.

In *digestion* the utility of experiment is manifest. There are two methods by which we may learn the conditions of gastric digestion, and collect its secretion—viz., by observation of gastric fistulæ produced by chance in man, and by artificial fistulæ in animals. The first has only been possible in three or four instances, but the study of the effect of food on the gastric secretion in dogs and cats has been largely observed. When we think of the common occurrence of dyspepsia, of the relief given by pepsin, acids, and alkaline waters, we should remember that this treatment is due to the suggestion of physiologists who have studied the effects of such substances on the gastric juice, and the relief so obtained is not bought too dearly at the expense of the mutilation of these animals.

Remarkable experiments have added to our knowledge of *nutrition*. Dogs and cats have been submitted to varied alimentation, and the quantity of food necessary for man has thereby been deduced. It has been proved that on a diet of gelatin alone animals die; that when the food contains no nitrogen they waste and die; that fat, sugar, and starch taken alone are insufficient to support life. Certainly an animal dying from inanition for want of proper or sufficient food may excite compassion, but I should hold this pain sufficiently recompensed if I had been able to find the quantity of aliment necessary to maintain the health of one of our own kind. From such experiments the normal diet of adult man may be computed, and it is on these facts of the physiologist that the daily rations of our soldiers and sailors are computed. The advantages gained far outweigh the disadvantages.

As to the *nervous system*, how many experiments and how much pain have been inflicted on animals! But how much suffering has been spared to man! The great discovery of Charles Bell and Majendie is due to experiment. No one can dispute the importance of this discovery in therapeutics. Therapeutics is the art of relieving as well as of healing. Often the physician is powerless to give a remedy for a disease. Cancer, rabies, typhus, are plagues which cannot be directly combated; but pain can be assuaged; and how should we succeed in this if we knew not that the nerve-cords were the seat of pain. Before the experiments of Majendie and Legallois we did not know that the nerve was the agent for transmitting painful impressions from the periphery to the centre. It is now so notorious that one is almost ashamed to think of former ignorance. In obstinate neuralgias nerve-section leads to nearly immediate relief. Like the circulation of the blood, the duality of nerve-function comes into nearly all treatment of diseases; and it is impossible to think that we could relieve our patients if we were in ignorance of these facts as surely as we can in knowledge of them. The experiments of Fritsche, Hitzig, and Ferrier in proving the existence of portions of the cerebral cortex as centres of movement have been already put to account by surgeons in the relief of paralysis due to pressure of certain convolutions. Thanks to the scientific analysis of those vivisectors, we can pass from the effect to the cause, and assign to paralysis a central lesion at a well determined spot, so that trephining at this spot may cause the paralysis to disappear.

Of the most undoubted methods of treatment of nervous or muscular affections electricity stands foremost. Galvani—the discoverer of dynamic electricity—experimented on frogs; and since his time numberless *savants* have not scrupled to make martyrs of innocent animals for the like gain. They have taught us to estimate the effect of the electric current on nerve and muscle. The muscle, whose nerve is divided, rapidly becomes fatty and incapable of function. Electricity prevents this change. In former days patients whose motor nerves were destroyed by disease or injury were condemned to remain permanent paralytics. Frequent galvanisation is now applied to prevent this paralysis—keeping the muscle alive until the nerve regains its function. In a very large number of nervous diseases—neuralgia, paraplegia, ataxia, hemiplegia—excellent results follow electrical treatment. The numerous patients relieved by this admirable therapeutic agent have no call to speak ill of such vivisectors as Galvani, Aldini, Volta, Majendie, Marshall Hall, Remak, Du Bois Reymond, and many others, since it is to their discoveries that the relief of their ills is owing. Would Galvani have made his discoveries had he refrained from dissecting frogs? Would the electric current have been applied to atrophied limbs if it had not been found that the action of this current in dogs was salutary and not dangerous?

Experimental pathology is a relatively new science (it dates from Hunter). Without doubt it has a great future before it, so long as we do not fear to make animals suffer for the sake of man. There are many examples of this. Uræmia, due to retained urinary secretion, has been studied on dogs whose kidneys have been removed or ureters tied. The knowledge of the fact that the phenomena of certain nephrites are due to the accumulation of urinary materials in the blood has led to the correct treatment of these affections (as bleeding, baths, milk régime). The treatment of sympathetic ophthalmia by section of the ciliary nerves of the diseased side has been shown to be advantageous by experiment, and the results yielded by experiments on dogs and rabbits have been applied to patients. Ophthalmologists have been led to correct treatment of cataract, to iridectomy, by experiments on animals. The experiments on the formation of callus, on pseudarthrosis, on osseous grafts, on regeneration of bone by periosteum, are of chief importance in surgery, and although the subject has not yet been fully worked out, the results of experiment, combined with those of clinical observation, are such as to encourage its continued study by vivisection. Trophic muscular changes due to section or wounds of nerve-trunk are explicable since we have known the precise function of nerves to the parts they supply. The famous experiment of Claude Bernard on the great sympathetic and the rabbit's ear has led to the establishment of the vaso-motor theory—a theory which plays so large a part in the medicine and surgery of the present day. The treatment of the majority of skin diseases rests as much on a knowledge of the cutaneous circulation as on the empirical methods of the older physicians. Brown-Séquard, who has made so many painful experiments on dogs and guinea-pigs, has given to medical science most useful ideas relating to epilepsy and tetanus. We know now that a peripheral excitation of a nerve may lead to excitation of the spinal cord, and to convulsions or generalised epileptic attacks. The treatment of such peripheral epilepsies is thus indicated, and the epileptic seizure has been stayed by suppressing the nervous excitation proceeding

from the altered peripheral nerve. Experiments made upon wounds of the chest have led to the adoption of their correct treatment (e.g., by occlusion of the wound).

The researches still to be made are numberless. A certain number of sensitive people think these studies of no interest, because they do not lead immediately to practical results. For them etiology, pathogeny, pathological anatomy, and physiology, even diagnosis and prognosis, are of small importance. They only know one thing, and that is the therapeutical outcome, and they condemn experiments which do not at once yield this.

But even on this ground experiment has been useful. Therapeusis has and does profit by experiment. It is true that the discovery of some valuable remedies has been a matter of chance—e.g., quinine, mercury, opium, even chloroform; but we only know certainly the action of these drugs from an analysis of their physiological properties, their action on the heart, lungs, and liver, on secretion, on nutrition. At any rate, we do not wish to experiment on man, at the risk of poisoning him, when animals can be employed. A certain number of drugs of recent discovery have been made known to us only through the physiologist. The discoveries of Hunter and Majendie established the laws of absorption, and a drug can only be safely given if it is known how it is absorbed. The properties of chloral, the use of which has become so common, were first demonstrated in animals. The combination of chloroform and morphia, in increasing the anæsthetic effects of each singly, was first shown by Liebreich, and to Claude Bernard and Nussbaum we owe the experiments by which this double medication has been introduced into medical science. Apomorphia, pilocarpin, and a large number of alkaloids extracted from poisonous plants, have replaced the empirical employment of aqueous or alcoholic extracts. Is it not a gain to replace old pharmacopœial preparations by those which are chemically defined, whose action on organs and functions is well known? Experimental therapeutics is a science with a future before it, promising still greater benefits than it has already given.

In legal medicine, in toxicology, the study of the causes of death from poisons, and the means to combat these by appropriate antagonistic poisons, it is necessary to have recourse to experiment. If in an empty protest of humanity we deprive *savants* of the right to submit living animals to experiment, we shall go back beyond the days of Galen, who sought on pigs, birds, and monkeys to learn more of the functions of the human organism. If all those who have been relieved—verily made to live again—by modern medicine and surgery could speak, they would confound those who load vivisection with calumny, and they would hold that their own life and sufferings weighed more in the balance than the sufferings of those animals which have been sacrificed in laboratories to the lasting benefit of man.

HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.

BY GEORGE FLEMING, F.R.C.V.S.,
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(Continued from p. 418.)

WHAT we might call the *casual evidence* as to the non-identity between human variola and cow-pox, and their being two distinct diseases of a group, is still further increased by other facts which may be mentioned. The individuality of contagious maladies is perhaps never more strongly marked than when we find two affecting the same person or animal, and running their course concurrently, the various phases of the one being passed through entirely independently of the evolution of the other. Such instances are far from infrequent in the practice of the physician and veterinary surgeon, and from my own experience I could relate several. But I refrain from doing so, as additional testimony of this kind is not required at this period of the nineteenth century, I hope. But in the discussion now undergoing consideration, such evidence should be borne in mind when we mention the fact, that cases are recorded in which people already infected with small-pox, and who had been vaccinated when so infected, have had the eruptions of the two diseases apparent at the same time, each preserving its special characters, undergoing its different changes, and terminating exactly as if it were totally independent of the other, and had not the slightest influence in modifying or checking its course. And more than this, Hallé is reported to have employed the lymph from vaccine vesicles developed under these conditions, to vaccinate healthy children, and has only produced the pock of vaccinia—never small-pox. In one of Chauveau's experiments, in which a horse was inoculated with the virus of human small-pox, which gave rise to local effects, and was also inoculated with vaccine lymph, evidence of the two morbid actions operating coincidently was undeniable, and afforded one more proof that a certain lapse of time must ensue before the preservative influence of vaccination comes into play.

However strong and abundant clinical and casual evidence may be, it is not always completely convincing, unless supported by experimental demonstration, when it is then irresistible. This evidence is also fortunately at hand, and in a most exhaustive and complete form; and it is very remarkable that with the exception of one speaker at the Conference (Dr. Cameron), its existence does not seem to have been known to those present; at least this may be inferred from the circumstance that it was never alluded to, save in the one instance mentioned. That my surmise is not very wide of the truth may be taken for granted, when we read of one gentleman saying, in reference to the experiments conducted by my friend, Professor Chauveau, of the Lyons Veterinary School, and briefly summarised by Dr. Cameron, that "it seemed strange that men should, at the present time, go abroad to France, to the futile and speculative experiments of a Frenchman, and take possession of the inferences he entertained." Such language betokens either ignorance of, or an utter failure to appreciate, the value of the results of these experiments; but then this speaker asserted that he had successfully inoculated a large number of cows with small-pox virus, and produced vaccinia, which gave him abundant vaccine lymph!

In France, as in some other European countries, the origin of cow-pox had long been a fruitful subject for discussion and speculation, and more than once it had provoked warm debates at the Paris Academy of Medicine. In 1863, M. Bouley, then director of the Alfort Veterinary School, had re-discovered at Paris the "horse-pox" of Dr. Loy of Pickering—in reality, the "grease" of Jennor, Sacco, and others, who believed in the equine origin of cow-pox. But M. Depaul, who had also with Bouley studied this *eruptive* disease of the *horse*, was inclined to follow the example of Baron and his followers, and to conclude that it and all other eruptive disorders occurring in animals, and possessing analogous characters, were nothing more nor less than human variola. So it was that he included sheep-pox, and the aphthous disorder of animals known as foot-and-mouth disease, in the list of disorders having their common source in small-pox. The influence which he and Bouley possessed divided the Academy into two camps, and the result was recourse to experimentation, which happily led to the conclusion that this equine eruption was capable of producing cow-pox in the cow and vaccination in mankind. But the burning question as to the identity of small-pox and the diverse varioliform affections of animals remained as undecided as before; no new facts of a reliable kind were brought forward, and there was nothing to talk about save the well-known contradictory circumstances which had been so often employed before, but which were brought into debate with all the oratorical ability and scientific ardour for which that renowned body is remarkable. Viewing it as a purely experimental matter, as a question which could only be decided by true facts, the Society of Medical Sciences of Lyons appointed a commission to carry out this inquiry. The commission was composed of Drs. Bondet, Delore, Dupuis, Gailleton, Hornad, Lortet, Meynet, and Viennois, and the veterinary professor Chauveau. The latter was the President of the Commission, and on him chiefly devolved the task of experimenting on the animals. A man more competent for the onerous duty imposed upon him could not be found in Europe; his reputation in the world of medical science stands very high as a most accomplished physiologist and experimental pathologist, the results of whose experiments may be received as absolutely trustworthy. Drs. Viennois and Meynet were secretaries, and the three drew up the final report, which was presented in 1865. On March 5th, 1866, the French Academy of Sciences

awarded the Montyon prize, value 2500 francs, to Chauveau and his two colleagues, Viennois and Meynet, and gave honourable mention to the other members of the commission. This award was made on the recommendation of a commission appointed by the Academy, and constituted by such men as Claude Bernard, Serres, Velpeau, Cloquet, Joubert, Flourens, Rayer, Milne Edwards, and Longet, who gave their opinion as to the great interest and value of the Lyons investigations. This commission, aware that the medical profession had been divided in opinion as to whether, if human variola were inoculated on the cow, it could be so modified as to produce true primary vaccinia, or whether variola was so foreign to the bovine species that its inoculation in cattle was impossible, alludes to the ability of Chauveau, and to the results of his labours, which demonstrated that the truth lay on neither side. These results proved that human variola could be inoculated on the cow and horse with the same certainty as vaccinia; but they also showed, contrary to what takes place in the human subject, that the primary effects produced by inoculation with the two viruses were absolutely different. Thus, with the ox, the small-pox virus only determines a local eruption of papules, often so small that they would pass unperceived if one were not warned of their existence. Hence the mistake made by some experimenters, who have denied that small-pox could be inoculated on bovines. The vaccine virus, on the other hand, engenders the typical pustular eruption, with its large characteristic *boutons*.

Analogous differences are observed, continue the Academy Commissioners, on animals of the equine species. These differences are still more manifest in the same animal inoculated simultaneously with the two viruses: the two eruptions are then developed simultaneously without appearing to influence each other, and preserve their special characters. But the two viruses are not less capable of acting one on the other, and so reciprocally neutralising each other—just as in man—when inoculated successively on the same animal. In fact, human small-pox generally fails on vaccinated animals, while the vaccine virus as commonly fails on those which have been previously submitted to variolous inoculation. In no case had Chauveau and his colleagues seen the slightest tendency to *rapprochement* between the characters of the two eruptions in the horse and ox. In attempting to cultivate the variolous virus on these two species, they have even discovered that it cannot become acclimatised in them, and that, with the ox in particular, it becomes impotent at the second or third generation; while the vaccine disease is propagated indefinitely from one individual to another. With regard to the inoculation of man with this variolic virus which had been transiently (*passagèrement*) implanted in the organism of animals, this only engenders small-pox, neither more nor less, just as does the variolous virus obtained direct from the human species. The eruption is sometimes discrete and benignant, sometimes confluent and serious—at times normal, at other times abnormal. But in all cases the disease preserves its property of infecting healthy individuals by miasmatic contagion (infection); and its virus, even when taken from an almost absolutely local eruption, never gives more, in bovine animals, than the papular eruption which ordinary human variola produces in these creatures.

The Academy of Sciences Commissioners conclude their verdict as follows:—"The experiments, the results of which have been just mentioned—experiments as remarkable by their number as by their distinctness (*netteté*) and concordance—appear, therefore, proper to solve the debatable points in view of which they were instituted. In establishing that vaccinia and variola, notwithstanding the features which assimilate them in animals as in man, are, nevertheless, totally independent of each other; that their viruses form two distinct individualities; that the two affections thus constitute two different, immutable species, which cannot be transformed one into the other; that, consequently, to seek to produce vaccinia from variola would be to pursue a dangerous chimera, which would revive all the dangers of inoculation of by-gone days—in establishing facts of such great importance, the experiments directed by M. Chauveau have rendered an incontestable service to science and to medical practice."

Such was the opinion expressed by the representatives of the Academy of Sciences with regard to the Lyons experiments, and after reading the account of them, and knowing well the very trustworthy character and great professional ability of M. Chauveau, I think no doubt whatever can be entertained as to the justness of that opinion. And, besides, it must be remembered that an Italian Medical Commission, which carried on similar experiments and investigations at Turin from 1871 to 1874, came to the same conclusion that Chauveau did—that human small-pox cannot be converted into cow-pox when the virus is transferred to bovines, but always preserves its original character.

The advantages and opportunities the Lyons Commission could avail themselves of were very great. The magnificent veterinary school of that city was placed at their disposal, with as many horses as they required for experiment, as well as lodging and food for the other numerous animals they employed in their investigations. The 160 cows and bulls, and 40 pigs at the Imperial Agricultural School of Saulsaie, were at their service; as well as about 100 cows and numerous sheep and goats at a large farm near Lyons. For experiments on the human species, the *service des vaccinations* at the Hôpital de la Charité, presided over by Drs. Berne and Delore, as well as a member of the Commission—M. Horand—was made available. The experiments were conducted with the greatest care and deliberation, and were very numerous; the observations on them were drawn up by Dr. Horand. They were divided into two orders or sets; one order of experiments with vaccine virus, another with that of human small-pox. Each of these again was arranged in series, and each experiment in the series is described in detail in the report.

The variola experiments are those which have most interest and importance for us, so far as the identity of small-pox and vaccination are concerned, though those with vaccinia have a more or less direct bearing on these, as well as on animal vaccination. More especially is it necessary to refer to the results of the first group, in order to refute the statement made at the London Conference that the small-pox matter was merely deposited in a little pouch in the cow's skin, and then re-transferred to the human subject, to whom it gave small-pox. Quite cognisant of what had already been achieved in this direction, the greatest circumspection was observed in guarding against fallacious conclusions; and the perfect knowledge possessed by Chauveau of the nature and habits of animals, their structure and diseases, as well as of experimental methods, was certainly an advantage of which few if any previous investigators could boast.

In order to study variola inoculated on the bovine species, twelve animals were selected which were known not to have had cow-pox. Of these nine were cow- or bull-calves, two were recently-calved milch cows, and one a six-year-old pregnant cow. They were all inoculated with small-pox matter between December and April, the material being obtained from four people affected with small-pox, and who had never been vaccinated; it was always employed very fresh. The inoculations were made at the vulva in the females, and perineum and scrotum in the males, and exactly in the same way as in vaccinating—the punctures being sometimes sub-epidermic, at other times quite subcutaneous. In none of the animals were there observed the slightest general phenomena—no disseminated eruption, fever, loss of appetite, or diminution of the lacteal secretion. With regard to the local phenomena, they were so trifling that in a first series of experiments they were inappreciable; hence the error of some of the preceding experimenters, who concluded that cattle could not be successfully inoculated with small-pox virus. But other experiments proved this to be a fallacy; and a drawing accompanying the report shows the perineal region of a bull-calf, on the left side of which five sub-epidermic variolous inoculations had been made, and the effect of which had arrived at its *summum* of development. There were small, red, slightly-prominent papules, from two to four millimetres in diameter, and slightly conical, in the centre of which the inoculation-puncture could be distinguished. These papules commenced to develop on the second day, and on the fifth had arrived at the dimensions shown in the drawing. On the twelfth day they had completely disappeared, after furnishing at the seat of puncture an extremely small, darkish crust. This course was not observed, however, in all the twelve inoculated animals; but it was remarked that the deep punctures did not furnish more evident results than the sub-epidermic ones. The former, though made with a cannulated needle highly charged with virus, only gave rise indeed to an eruption in which the papules were not so red or circumscribed as in the latter, and frequently could only be distinguished in the skin by passing the finger over them.

Some deep inoculations were made by passing the virus through a wound several millimetres in extent, made by a lancet. The results were no more marked.

The apparent absence of a specific character in the papular eruption produced by inoculating the small-pox virus, might have led to the belief that it was merely inflammation produced at the seat of puncture. For instance, the first animal inoculated was a calf, which was inoculated at the vulva. A number of small papules appeared, and it was imagined that a very characteristic eruption of cow-pox was about to be developed; but instead of developing into pustules, they rapidly disappeared without leaving any trace of their existence, and then the result was considered negative, and the animal put to one side. But being desirous, some time afterwards, of producing cow-pox by means of vaccine lymph of Neapolitan origin, this calf, being at hand, was vaccinated from a magnificent pustule raised on another calf which presented a very fine vaccinal eruption. On the eighth day the inoculation had quite failed, greatly to the astonishment and regret of the Commission, as, relying on its success, they had not provided themselves with any more lymph, and had to send for another supply. Thinking the inoculation had not been properly performed, when the new lymph came it was tried again with the utmost care, but another failure resulted in this calf, while with other two animals—a horse and a calf—vaccinated at the same time, there was a beautiful eruption. The Commission were now compelled to admit either that the small-pox inoculation had produced a specific eruption capable of protecting the animal from vaccinia, that it had been previously affected with that disease, or it had no receptivity for the vaccine virus. At that time only about eight bovines had been vaccinated, and it was not certain whether this species would contract the cow-pox in this way. The experiments were continued, altogether ten animals were variolised, and then vaccinated some days afterwards; but six had no vaccinal eruption whatever, three had rudimentary and ephemeral pustules, and one only showed a regular and characteristic cow-pox. Considering the readiness, as was afterwards found, with which true cow-pox, human vaccinia, and horse-pox could be inoculated, and that the former could only be produced very exceptionally when the animals had been previously variolised, the conclusion arrived at by this important chance discovery was that variolisation exercises a neutralising influence on the development of vaccinia; and that the slightly-marked eruption, so undecided in character, caused by the inoculation of small-pox virus on bovines, is of a specific nature—in this species presenting, with the cow-pox, the same relations that variola and vaccinia do to each other in the human species.

(To be continued.)

SUDDEN AND UNEXPECTED DEATH FROM RUPTURE OF A VESSEL IN THE CERVICAL PORTION OF THE SPINAL CORD.

BY FREDERICK PAGE, M.D. EDIN.,
LECTURER ON MEDICAL JURISPRUDENCE IN THE UNIVERSITY OF DURHAM, AND SURGEON TO THE HOSPITAL FOR SICK CHILDREN, NEWCASTLE-UPON-TYNE.

DURING an indisposition of some five days' duration, a delicate girl, aged nine years and eleven months, suddenly died, as an eye-witness described, "choking." The history of the case is very imperfect. The child's stepmother was a most peculiar woman, from whom no reliable information could be obtained, and the father saw little of the child in consequence of his being away from home all day, and often for part of the night. The girl was a seven months' child, and had been delicate from birth, though she had no medical advice for eleven months previous to her death. For a considerable time she had suffered at irregular intervals from attacks of indisposition, lasting some few days, and leaving her debilitated, but otherwise in her usual health. During these attacks she always complained of stiffness of the neck, of pain, sometimes very severe, along the upper part of the spine, and she kept her left arm still because she felt pain on moving it. She was prostrate, and alternately hot and cold. She did not vomit, never had convulsions, nor any kind of fit. On a Saturday she was in her usual health, and took a long walk. On Sunday she was ailing. On Monday she stayed away from school, and was confined to the house, complaining of pain and stiffness in the neck and left shoulder. She refused her food, and was thirsty. She was much the same on Tuesday. On Wednesday afternoon she was put to bed, and on Thursday morning she seemed to be much better. At 4 P.M., just after her bowels had been moved, she suddenly died without being seen by a medical man.

Autopsy, twenty-four hours after death.—The body was thin, but not emaciated. The muscles of the arms were much less plump than those of the legs. Froth was issuing from the mouth. There were no marks of injury. Nothing was found to account for death in the belly, chest, or skull. In the substance of the spinal cord, at the lower part of the cervical region, a considerable infiltration of blood was found, and on section a clot about the size of a horse-bean escaped. The blood was infiltrated into the anterior and lateral tracts of the cord more than into the posterior portion. The cord around the infiltration was soft. The membranes and the vertebræ appeared to be quite healthy. There can be little doubt, I think, that this child was the subject of chronic disease of the spinal cord, which gave rise to the peculiar periodic attacks from which she suffered, and that the immediate cause of death was paralysis of the muscles of respiration from pressure upon the origin of the phrenic and other nerves. The blood proceeded from a vessel in the cord, ruptured, probably, by the effort of emptying the bowels.

The causes of death, and particularly of unexpected deaths, are well worthy the most careful consideration; and my object in placing the above case upon record is more to direct attention to a rare and peculiar explanation of sudden death than to enlarge upon the many features of interest which I think the case cannot fail to possess for the physician and the pathologist.

A CASE OF INTERFERENCE WITH NAIL-GROWTH DURING ILLNESS.

BY GEORGE THIN, M.D.

IN the volume of Lectures on Dermatology delivered in the Royal College of Surgeons of England in 1876-77-78, by Mr. Erasmus Wilson, reference is made (p. 78) to cases reported by Dr. Beau, of arrested nail-formation associated with illness. The publication of a certain number of cases in which the dates of appearance and disappearance of the depression in the nails are authentic may be useful, and I therefore give the following details regarding one that has come under my notice.

A middle-aged man was seized with severe colic-pains in the end of August, was confined to bed for a week, during which time he ate very little and suffered much from retching. It was only at the end of the third week that he regained his usual appetite.

Shortly afterwards I had occasion to observe that in every nail of both hands the groove described by Dr. Beau was to be plainly seen—a well-marked depression nearly a millimetre broad extending across the nails. When I first saw the depressions they had advanced nearly to the middle of the nails. I observed their progress forwards with interest, and found that they had not completely disappeared at the points of the nails until the first week of January.

Thus, from the date of the illness until the final disappearance of the corresponding depression in the nails there was a period of four months, and this is the fact which I think is worthy of being put on record.

Queen Anne-street, W.

ON TONGA.

BY C. BADER,
OPHTHALMIC SURGEON TO GUY'S HOSPITAL.

THE results obtained from Tonga by Drs. Ringer and Murrell (see THE LANCET, March 6th, page 360) fully coincide with mine. I have notes of cases of brain and kidney disease in which tonga alone succeeded in removing pain. I shall, however, confine myself to reporting the effects upon the eye. Some months ago, when commencing

experiments with tonga, I had the notion, the result of conversation with patients from the Fiji islands, that the drug might have a specific effect upon nerves which are instrumental in pain.

Of the three preparations—Tonga in a bag, the watery extract, and the alcoholic extract (prepared by Messrs. Allen and Hanburys, 37, Lombard-street, E.C.)—I found the alcoholic extract alone reliable. When dropped into a healthy eye it seemed to increase the power of accommodation—to approach the nearest point of distinct vision—without affecting the size of the pupil (though in some cases, taken in large doses internally, it caused great dilatation of both pupils). It acted beneficially in several cases of asthenopia. The sister in the Eye wards gave it with great benefit to a man suffering from painful rheumatic iritis. Several patients, with intolerance of light, were rapidly relieved.

A most striking effect was obtained upon diminished tension of the eyeball. Two months ago a lady consulted me for intense pain in the right eyeball, with marked decrease of tension (T—2), intolerance of light, and watering, the pupil and cornea being clear, with some conjunctival redness. The intense pain had deprived her of sleep for several nights. Some of the alcoholic extract of tonga was dropped into the eye at 2, 5, 7, and 9 P.M. The following day all intolerance of light had ceased, and she had passed a good night, free from pain. She stated that the drops caused no pain, but a sense of warmth, and that the pain in the eye subsided gradually; their use was continued for several days. Remarkable was the rapidity with which the tension of the eyeball became normal and remained so.

All cases of neuralgia (supra- and infra-orbital branches of the fifth nerve), with swelling of the temporal veins during the attack, were benefited. In these a teaspoonful of the extract in half a tumbler of water, and two or three more at an interval of half an hour until the pain subsided, were given.

Finsbury-circus.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tam aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

THREE CASES OF TUMOUR OF THE ANTRUM OF HIGHMORE.

(Under the care of Mr. CHRISTOPHER HEATH.)

WE are indebted to Mr. Silcock, surgical registrar, for the following interesting notes:—

CASE 1. *Collection of Inspissated Pus in the Antrum simulating a Morbid Growth.*—A. E——, aged forty-three, housewife, was admitted on June 3rd, complaining of pain and swelling of the left side of the face. There was an ill-defined swelling over the region of the left upper jaw, and the angle of the mouth on that side was drawn downwards. The swelling was both hard and tender; the skin over it appeared unaffected. In the mouth there was a tense, elastic, and tender swelling over the left half of the hard palate, displacing the alveolar process downwards. Slight discharge oozed from a small opening in the mucous membrane opposite the last upper molar tooth, the swelling being softer about this spot than elsewhere. The left nostril was blocked, its external wall being pushed inwards, and the patient complained of some discharge from it. The neighbouring lymphatic glands were not enlarged, and with the exception of occasional pain in the tumour, the patient suffered no inconvenience, her general health being excellent.

She had noticed the swelling for about two years, and its commencement was attributed to exposure to cold. At times the swelling increased, and became more troublesome, especially after prolonged overwork. No history of syphilis could be obtained, and her family history was good.

On June 5th Mr. Heath made an incision through the upper lip in the median line, prolonging it into the nostril of the affected side. The alveolus and hard palate having been divided with saw and bone forceps, a way was made into the latter, and a pultaceous offensive mass, about the size of a hen's egg, was turned out with the finger. On microscopical examination this was found to consist of fatty débris, granular pus cells, and acicular crystals. As the larger portion of the left half of the hard palate was partially loosened and absorbed it was removed with the forceps. The cavity of the wound was stuffed with a strip of lint to prevent any hæmorrhage, and the edges of the incision in the upper lip brought together by hare-lip pin suture.

The patient made an uninterrupted recovery, and was discharged from the hospital on June 22nd.

CASE 2. *Soft Fibroma of Antrum.*—J. P——, aged twenty, domestic servant, was admitted on July 1st, 1878. She stated that she first noticed a swelling of the right side of the face in 1874. The swelling never entirely subsided, and gave her more or less pain. In 1877 a swelling appeared in the roof of the mouth, accompanied by copious and offensive discharge. At this time the patient suffered from toothaches, referred to the right upper molar teeth, which were consequently extracted. Relief was thus obtained for a month or so, but the tumour gradually increased in size, and at the time of admission the pain had become much more severe, and was almost constant. There was likewise a uniform swelling of the right side of face, the malar bone and adjacent parts of the superior maxilla feeling fuller than the corresponding parts of the left side. In the mouth the growth involved the right upper alveolar process, the second molar being in the centre of the swelling, and quite loose; its inner margin corresponded with the inner edge of the alveolar process; externally it merged into the swelling of the antrum, and was here soft, elastic, and irregular. On examination with the finger, the posterior nares were found to be free; there was no discharge from either nostril, nor any evidence of implication of the right orbit, or of the neighbouring lymphatic glands. The heart was slightly hypertrophied, and a presystolic murmur was audible, but other organs apparently healthy. Her general health was fair.

On July 3rd an incision was made into the antrum from beneath the lip, and a mass of new growth was turned out with the finger; but a rapid recurrence having taken place, the whole of the upper jaw was removed on July 17th. The bleeding occurring during the operation was arrested, partly by ligature, and partly by Paquelin's thermo-cautery. The edges of the incisions (one through the upper lip into the right nostril, another begun near the inner angle of the orbit, and carried down by the side of the nose around the ala, so meeting the first) were brought together with hare-lip pin and silk sutures, and painted over with collodion.

Examination of the parts removed showed that the growth was limited to the antrum, and had been completely extirpated. It was of a pale yellow colour, and almost gelatinous in consistency. Microscopically it consisted of wavy interlacing bands of fibrous tissue, in the midst of which a few spindle-shaped and round cells were visible.

With the exception of slight hæmorrhage from the cavity of the wound on July 25th, the patient made an unretarded recovery, and was discharged from the hospital on August 21st.

She was seen on October 25th, appearing in excellent health; beyond a little sinking in of the right cheek scarcely any trace of the operation was visible.

She was again seen in May last, and with the exception of some inconvenience arising from badly-fitting artificial teeth and palate, was free from pain, and in good health.

(The notes of the third case will be given in a future issue.)

LEEDS GENERAL INFIRMARY.

CASES OF NERVOUS DISEASE, PRESENTING OPHTHALMOSCOPIC PHENOMENA.

FOR the following notes, continued from page 366, we are indebted to Dr. E. H. Jacob, late resident physician.

CASE 9. *Cranial Tumour; Optic Neuritis.*—H. N——, aged twenty-five, admitted Nov. 10th, under the care of Dr. Allbutt. She had never been very strong, and had suffered frequently from intercostal pain. Six years before admission, while running, she had a fall, after which she was insensible for some minutes. A few days later she

found a difficulty in playing the pianoforte with her right hand, and this she never completely recovered from. Three years before admission she began to be deaf of the right ear, and twelve months later severe headaches came on, during which the sight was much affected. She "fainted" occasionally, but never had a regular fit. She had a continued feeling of weight in the head, with frequent severe pain accompanied by vomiting of clear fluid. Vomiting occurred nearly every day. There was occasional pain in the shoulders and the left side. She was fairly nourished; face rather flushed; pupils dilated but equal; tongue clean and protruded slightly to the right; appetite good; bowels regular; she slept badly, on account of the pain in the head. The catamenial functions were regular; the sight was much impaired; she could count fingers at about a foot distance; there was no strabismus; there was optic neuritis in somewhat late stage, going on to atrophy. Hearing was much impaired, especially in the right side; with the left ear she could hear a watch on contact, and nearly equally well if placed on the temple; there was much wasting of the extensor muscles of the right hand, especially the muscles on the outside of the thumb; the metacarpal bone stood out almost uncovered in front; she could not fully extend the fingers; there were slow spasmodic twitchings of both hands, more marked in the right thumb; the grasp of both hands was feeble, but felt about equal, though she said the right was the stronger. Occasionally she gave slight sudden starts; these occurred several times while her eyes were being examined with the ophthalmoscope. Ten grains of iodide and bromide of potassium were ordered, as well as an occasional chloral draught.

On Nov. 26th she had had less pain in the head since admission, and had experienced much relief from the chloral. The pain came on in paroxysms generally between 7 and 9 P.M., accompanied by tinnitus and blindness. She was ordered five grains of quinine every day at 5 P.M. This produced some improvement for two or three days. On the 7th of December she had had much pain for two days, with some epistaxis; and on the 8th she was in severe pain all day, slightly relieved by a draught of chloral and nepenthe. In the afternoon she had a slight convulsive attack. Next day she lay in an unconscious state, occasionally moaning. Pulse 100, regular; breathing also regular. Movements of right thumb continued. On the 24th she was very restless in the night, and had much pain; the deafness had increased; the movement of the thumb had ceased. On Jan. 4th she had a strong convulsive seizure lasting about eighty minutes, followed by great exhaustion. On the 10th she seemed rather better, and there was some return of sight and hearing for a short time in the morning. She had less pain, but still complained of tinnitus. On the 23rd she had another convulsive attack, after which she lay insensible, moaning frequently.

Her state varied considerably. Sometimes she could hear a loud voice; at other times she was quite deaf, and was insensible. On Feb. 7th the right thumb began to quiver as at first, and on the 19th she was discharged, at the request of her relations, but little improved.

Dr. Jacob adds that, by the kindness of Mr. Scatchard of Boston Spa, he had had an opportunity of examining this patient on Oct. 15th, 1879. She remained in nearly the same condition for about six months after leaving the infirmary, and then began to slightly improve. When last seen she looked pretty well in the face and was fairly nourished, but had rather a dazed expression. The pupils were undilated. She could see a hand about two feet from her face, and could walk a little, but was very weak on the right side. The right thumb still quivered, but the muscles were not more wasted than they were seven months before. Optic neuritis was still well marked. The edges of the discs were raised and woolly, of a very white colour, but there were a few large vessels. She could only hear a loud noise in her left ear. She was cheerful, but suffered from occasional paroxysms of pain at the back of the head, and there was a slightly boggy feel on the scalp over a small area above the occipital protuberance. She had slight difficulty in swallowing, but her appetite was good.

Remarks.—The great remissions of symptoms observed in this and in many other cases of cerebral tumour are remarkable. Once after the patient left the infirmary she had a very severe paroxysm of pain, which laid her up for more than a week. The convulsive movement and atrophy of the muscles of the thumb evidently point to a corresponding atrophy of the brain-centres for these muscles; and should the case soon come to a fatal termination, it may allow of the accurate determination of the locality of these centres, which as yet have only been indicated by experiments on animals. The severe attacks of symptoms are perhaps due to transient accession of encephalitis, in an analogous manner to the attacks of pleurisy in the course of phthisis.

(The series will be concluded in a future number.)

CHESHIRE COUNTY ASYLUM, MACCLESFIELD.

A CASE OF CANCER OF ŒSOPHAGUS; PERFORATION OF THORACIC AORTA AND DEATH FROM HÆMORRHAGE; REMARKABLE LATENCY OF SYMPTOMS.

(Under the care of Mr. JAMES NEIL.)

E. H——, aged forty-five, a female patient, had been an inmate of the asylum for nearly two years. Her mental condition was one of partial dementia. Some months before her death she fell gradually into feeble health, without having any symptoms pointing to local disease. Lately she became very hard to please with her food, and was often sick after eating. She spoke little at any time, and it was more by signs than words that she, on a few occasions, indicated that she had pain in her back. She became thinner, and her aspect was very cachectic.

On the morning of Oct. 24th, 1879, about eight o'clock, she vomited nearly two ounces of blood. Soon afterwards she fainted. In a short time she recovered consciousness, and expressed a desire to go to stool. She was assisted to do so, and voided per rectum about a quart of dark-coloured fluid blood, mingled with small masses of fæces. On lying down again in bed the flow of blood from the rectum recommenced, and continued till eleven o'clock. At that hour the general surface was blanched. The sclerotic was of a pearly white. The respiration was interrupted and sighing. Restlessness and tossing of the limbs were very marked. These symptoms continued till she died about three hours after the first vomiting of blood.

Necropsy, seventy-two hours after death.—Body rather emaciated. Commencing decomposition was shown by a dark-green colouring on the pit of the stomach, and along the short ribs on the left side. On section, the recti abdominis muscles were found to be well advanced in decomposition; soft, and of a dark-greenish colour. The heart and blood-vessels were almost empty, only one or two very small clots being found in the cardiac chambers. About two ounces of serum lay in the pericardium. The heart-muscle was in a state of advanced fatty degeneration. Each pleural cavity contained a small quantity of sanguineous serum. On raising the right lung, a circular adhesion about an inch in diameter, situated behind the root of the bronchus, was ruptured, disclosing a cavity in the posterior mediastinum, from which a small quantity of grumous fluid escaped. On removing the heart and lungs, the œsophagus was found to be the seat of cancerous disease involving the middle four inches of its length. The anterior half of its circumference was entirely destroyed, its place being mechanically supplied, and the continuity of the œsophageal tube preserved, by the reflected pleura, the root of the lung, and the posterior surface of the pericardium. The muscular fibres of the back wall of the œsophagus could be traced with difficulty through the upper half of the diseased portion and no farther. The disease seemed to be spreading downwards, and a ridge of new cancerous growth separated the lower border of the ulcer from the sound part of the œsophagus. The aorta was firmly adherent to the diseased tissue above it, and a perforation through its coats communicated with the tube of the œsophagus. The opening admitted the handle of a scalpel. It was not a cleanly eroded hole, but a curved valvular slit through the coats of the vessel. A thin layer of fibrin lay on the aortic endothelium around the opening. The stomach was full of blood-clot. The mass was moulded to the shape of the stomach, and was removed entire when the stomach was slit up. The intestines were anæmic, and their mucous lining was stained with blood-pigment. A small quantity of fluid blood was found in the upper part of the small intestine. The other viscera were quite drained of blood.

Remarks by Mr. NEIL.—This case exemplifies in a striking manner that latency of the subjective symptoms often seen among the insane. The disease must have existed for

months, yet there was no complaint of pain, and no dysphagia till the very last, and but little then. The patient seemed to have small difficulty in swallowing the little food she could be induced to take. A suspicion of malignant disease was entertained, but the symptoms were too indefinite to support even a probable guess at its exact seat. Frequent attacks of menorrhagia seemed, indeed, to point to the uterus rather than the œsophagus as the affected organ.

The case might have had an earlier and disastrous termination had the disinclination for food been attributed to the mental state alone, and the feeding-tube been resorted to.

It may be noted that the green colouring, the first external sign of decomposition, appeared, not as usual in the iliac fossæ, but on the pit of the stomach, and over the false ribs on the left side. These were the situations where the stomach, full of effused blood, lay in contact with the abdominal wall.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

Impacted Fish-bone in Gullet, wounding the Heart.—Acute Nephritis in Typhoid Fever.—Rapid and almost universal Paralysis with Recovery.—Fracture through Temporal Bone.—Femoral Aneurism, Ligature of External Iliac Artery.

THE ordinary meeting of this Society was held on the 12th inst., the President, Dr. Greenhow, F.R.S., in the chair. A peculiar and rare case of "general" paralysis rapidly recovering under antisyphilitic treatment was related by Dr. Buzzard; and the subject of the use of the carbolised silk ligature in the treatment of aneurism was raised by Mr. Clutton.

It was announced that the next meeting would be held on that day week, the 19th.

Dr. Carrington showed a case of Hydro-meningocele; Dr. Crocker one of Herpes Iris; and Mr. Spencer Watson one of Eyeball Tension treated by Sclerotomy. Dr. Buzzard also exhibited microscopical specimens of diseased Spinal Cord, from the case narrated by him at the last meeting of the Society.

Mr. EVE read notes of a case of Impacted Fish-bone in the Œsophagus, penetrating the Diaphragm and Pericardium, and wounding the Heart. The patient, a costermonger, aged fifty-nine, felt pain in his throat the day after he had been supping off fish. He went to a hospital, where a probang was passed, and on leaving he felt severe pain in the chest. He walked home with difficulty and took to his bed. He began to suffer from vomiting, and died suddenly on the third day. A lance-shaped fish-bone was found lodged in the œsophagus a quarter of an inch above the cardiac orifice, passing upwards and forwards through the diaphragm and pericardium, and producing a lacerated wound on the posterior surface of the heart. The pericardial sac was distended with blood. Mr. Eve thought this one of the calamities of surgery, believing that the probang had pushed down the bone, and caused the oblique impaction. He referred to a case related by Mr. Durham where the stomach was similarly perforated; and stated that there was a preparation in St. Bartholomew's Hospital Museum where the aorta was nearly severed by a fish-bone. Mr. Eve suggested the use of the laryngoscope in indicating the position of such bodies impacted in the larynx.

The PRESIDENT communicated notes of a case of Typhoid Fever with Acute Nephritis and Profuse Hæmaturia without Dropsy. A porter, aged twenty-one, was admitted into the Middlesex Hospital under Dr. Greenhow's care, on Nov. 25th, 1879, the fifth day of a fever, which set in with considerable severity, the second day of the attack being marked by vomiting, cough, and slight sore-throat; and in the night he began to have painful micturition, and noticed that his urine was almost black in colour. On admission, pulse 108; temperature 103·2°; urine sp. gr. 1012, of a deep red colour, from admixture with blood, containing albumen—one-half, numerous blood-globules, blood and epithelial casts. He was very prostrate, and suffered from muscular pains. There was impaired resonance with bronchial breathing and scanty crepitation at the apex of the right lung, but no râles elsewhere. The cardiac second sound was reduplicate. Abdomen was tympanitic, and there were tenderness and gurgling in the right iliac fossa. The liver and spleen were not enlarged. There was no diarrhœa nor rose-spots. Cold sponging was ordered and a fluid diet. At 9 P.M. pulse 126; temperature 104·6°. The illness ran a rapid course, prostration increased, the pulse-rate ranged between 100 and 130; the temperature 97·6° to 104·8°. Restlessness and delirium, passing towards the close into somnolence with occasional subsultus in arms and legs, were observed. The tongue became dry and fissured. The urine continued to be blood-stained, but the amount of blood and albumen diminished. The abdominal distension persisted, and characteristic diarrhœa appeared on the 27th, continuing till death, which took place on December 8th, the thirteenth day of his illness. The autopsy revealed mitral thickening and enlargement of the heart, and marked pulmonary hypostasis. Two or three sloughing ulcers occurred at the lower end of ileum, and one in the healing stage, Peyer's glands and solitary follicles being elsewhere swollen. Liver and spleen greatly swollen and softened. Kidneys, weighing twelve and fourteen ounces respectively, were intensely gorged; their secreting tubules were filled with swollen granular epithelium, and between the tubules there was small-celled infiltration. Dr. Greenhow remarked that he had not met with a similar instance. Albuminuria, when it occurs, is usually a late event in typhoid fever; according to Liebermeister, not until the fever has reached its height; and Murchison says it rarely appears sooner than the third week, and is due either to congestion or to parenchymatous degeneration, not as due to acute nephritis. Dr. Murchison also says that when copious hæmaturia occurs it is generally associated with other hæmorrhages. The only parallel instance to the present case Dr. Greenhow had found on record was a reference by Liebermeister to two cases of uræmia from acute parenchymatous nephritis in the Basle hospital, in 1872, soon after admission, and during the height of an attack of typhoid fever. The most careful inquiry failed to elicit any history of previous disease in the present case; so that it seemed as if the trivial cardiac hypertrophy and mitral thickening were due to the very intense nephritis. The points then of chief interest were the concurrence of typhoid fever with such intense nephritis, the entire absence of dropsy, and the severe and rapid course of the disease.—Dr. CAYLEY said that of late years in the London Fever Hospital there had only been one case of typhoid fever complicated with acute nephritis, which came on during convalescence from the fever. Two years ago a patient in the same hospital had profuse hæmaturia, but Dr. Cayley had never seen a case with so rapid a course as that described by Dr. Greenhow. The presence of a healing ulcer would suggest that the period of the fever was later than was apparent.

Dr. BUZZARD read notes of a case of Rapid and almost universal Paralysis, involving the four Extremities and both sides of the Face, Respiration and Deglutition; Recovery. The patient, a sparely-built man forty-four years of age, when admitted under Dr. Buzzard's care at the National Hospital, presented double facial palsy. His face was devoid of expression; he could not whistle nor frown, and the saliva dribbled from his mouth. There was also complete palsy of the external rectus of each eye. The tongue was tremulous, but not wasted. He could not swallow solids, except with difficulty; but fluids did not regurgitate. The sterno-mastoids were flaccid. Respiratory movements were upper thoracic, and they were not aided by the sterno-mastoids. There was some loss of control over the sphincter ani. As to the limbs, he could just move his arms sufficiently to feed himself, but otherwise they were powerless, though not wasted. He was unable to stand, and there was great muscular flaccidity in his legs. The patellar tendon-reflex was absent in both legs.—*Cutaneous Sensibility.* Over both sides of face there was loss of tactile sensation, but heat and cold were differentiated. On the extremities there were defined areas of anæsthesia.—*Smell.* Assafœtida and sumbul could be recognised by right nostril, not by the left.—*Sight.* Muscæ; diplopia; fundus oculi normal.—*Hearing.* Normal.—*Taste.* Neither sugar nor salt could be perceived on either side of tongue. He suffered from sharp pain in the right thigh. The urine contained no albu-

men. The history of the case was as follows:—A month previously his face was noticed to be drawn to the right. Then he began to have sensations of "pins and needles" in the hands and feet; then his legs failed him. Next he lost power in swallowing, and, lastly, his arms got weak. There was no history of a blow or other injury, or exposure to cold, nor of any throat affection, nor of his having been in the vicinity of anyone suffering from sore-throat. When twenty-four years of age he contracted syphilis, but had no marked manifestations of the disease. He was given ten grains of iodide of potassium every four hours. Improvement soon set in, and about a fortnight after admission he was ordered mercurial inunctions, the dose of the iodide being increased to fifteen grains. Ten days later the anæsthesia was much diminished, and a considerable amount of power had been regained; and in about another ten days he was able to walk. When discharged three months after admission he could walk fairly well; but the patellar tendon reflex was still absent. A note three weeks later stated that he could then walk three or four miles, and that there was decided patellar reflex in the right leg. Dr. Buzzard remarked that this seemed to be one of the cases of "acute ascending paralysis," without muscular atrophy, first described by Landry, which in the majority of instances terminated in asphyxia from paralysis of the respiratory muscles. Erb, who remarks that the disease may progress downwards from the bulb, says that as a rule there is a very slight disturbance of sensibility, so marked a feature in this case. The lessened muscular excitability was also peculiar. Dr. Buzzard compared the case to one he had brought before the Society in 1874, which he believed to have been syphilitic in origin. The spinal origin of the disease was evident from the absence of patellar reflex, the widespread paralysis, and the diminished irritability to the induced current. If it were a myelitis it must have involved the posterior as well as the anterior cornua, or it might be produced by some thickening or exudation in the pia mater. In the case he had previously recorded he thought the symptoms might have been produced by a pachymeningitis, but he rather doubted this from subsequent experience. He had had two other similar cases. In all but one there was a strong history of syphilis. The rapidity with which they all recurred under antisyphilitic remedies was in favour of their being due to that disease.—Dr. ALTHAUS asked if there was any anæsthesia of the mucous membranes supplied by the fifth nerve.—Dr. S. MACKENZIE said the case was a most peculiar one. There must have been some lesion in the cord itself. About ten years ago he had seen two cases of sudden and severe universal paralysis, both fatal. One was a case of a young girl, who after severe headache was attacked with vertigo and brought to the London Hospital partially insensible and completely paralysed. Drs. Ramskill, Sutton, and Hughlings Jackson examined the case. Sensibility was retained, there was no change in the optic nerves, the extremities were livid. She was bled to thirty ounces, with temporary relief. After death no gross change was found in the nervous centres. Another case, about the same time, was that of a man who was suddenly seized with paralysis in all his limbs, followed by tonic spasms, almost tetanic in character. Here again no change was found after death. He mentioned these cases to show to what an obscure class they belonged, and how difficult it was to decide the seat and nature of the lesion. Indeed, it was very difficult with our present knowledge to determine what lesion would account for all these symptoms.—Dr. MAHOMED had seen a somewhat similar case with Dr. Broadbent some years ago. It was not so severe a case as Dr. Buzzard's. A young man was taken suddenly ill, with intense vertigo, great weakness, and almost constant hiccough. For two or three weeks previously he had suffered from headache. He became more or less paralysed in the lower limbs; his face was expressionless and the pulse irregular. The case is published in Dr. Broadbent's lectures on "Syphilitic Nervous Diseases." The patient recovered rapidly under anti-syphilitic treatment; but for weeks afterwards he had disordered sensation—e.g., when in a cold bath one-half of his body felt hot and the other cold, and *vice versâ*. One marked feature was the intensely offensive character of the urine as soon as passed. There was no retention, and it appeared as if the urine underwent some chemical decomposition shortly after its excretion. The fundus oculi in this case was normal.—Dr. BUZZARD, in reply, said that the anæsthesia of the skin of the face was most complete, but he had no note of the condition of the mucous membranes. He asked Dr. Mackenzie if there was any reason to suspect syphilis in his cases, which apparently belonged to the same category.—Dr. MACKENZIE said there was no evidence of syphilis in either of them.—The PRESIDENT remarked upon the analogies presented by the case with those of severe diphtherial paralysis, of which he related an instance where there was complete palsy of limbs, face, and tongue. Although there seemed no doubt that Dr. Buzzard's cases were due to the syphilitic poison, yet it was interesting to note their similarity to those due to diphtheria.

Mr. EVE read notes of a case of Fracture extending through the Temporal Bone. A boy, aged thirteen months, fell off a bed and struck his head against a mangle. On admission to St. Bartholomew's Hospital he was insensible, vomited, and there was bleeding from the right ear. The next morning there was a profuse discharge of clear watery fluid from the ear, which continued until he died, on the third day after the accident. At the post-mortem examination lymph was found effused in the subarachnoid space over the whole surface of the brain, but most abundantly over the right hemisphere. A fracture passed vertically through the squamous portion of the temporal bone and the petrous bone, cutting across the external and internal auditory meatuses, and ending at the foramen lacerum posticus. A coloured injection thrown into the external auditory meatus passed out through the internal meatus, issuing from within the sheath of the nerve, thus demonstrating that the watery discharge in this case was the cerebro-spinal fluid.

Mr. CLUTTON read notes of a case of Femoral Aneurism; Ligature of the External Iliac Artery; Cure.—A patient, aged forty-six, was admitted into St. Thomas's Hospital on December 9th, 1878, with an aneurism of the right femoral artery, of about the size of a walnut, immediately below Poupart's ligament. It had been noticed three or four months. There was no history of syphilis or injury. There was slight arterial degeneration, but no marked affection of the heart. He was placed under the influence of iodide of potassium and a restricted diet. Every variety of pressure was tried with the exception of compression of the abdominal artery, but all failed. Accordingly the external iliac artery was ligatured antiseptically by Mr. Clutton on January 11th, 1879, with a thoroughly carbolised silk ligature, of which the two ends were cut short. A catgut drain was then inserted, and the wound closed with silver sutures. Pulsation in the tibial arteries returned in three days. As the temperature never rose above normal, and there was no oozing, the dressing was not changed for a week; the wound was then found completely closed; pulsation, however, could be felt in the sac. At the end of another week the dressing was removed for the second time, and the wound found soundly and firmly healed. Pulsation in the aneurism, however, continued till Feb. 15th (five weeks after the operation), when the patient was suddenly seized with pain in the right groin. Shortly afterwards the aneurism was found quite solid, and never again pulsated; but on February 23rd, exactly six weeks after the operation, there were slight pain and swelling in the wound, and a few days afterwards a thimbleful of sero-purulent fluid was discharged from the centre of the cicatrix. This little opening continued to discharge only sufficient fluid to keep a scab of about the size of a split pea adherent to the centre of the scar. In this condition he left the hospital on March 15th, with the caution carefully to watch for a little loop of silk. On May 22nd, four and a half months after the operation, he came to the hospital with the silk loop in his hand, and the wound again soundly healed without any scab. Mr. Clutton remarked that, considering the number of silk ligatures which are now often used in a case of ovariotomy in this manner, and the few, if any, that have subsequently appeared by suppuration or otherwise, it did not seem at first sight too much to expect from antiseptics, that the silk might become encapsuled in the tissues around the artery as efficiently as had been the case in the peritoneal cavity. In the present case, too, the ligature was not placed amongst the muscles of a limb, where a certain amount of movement must take place, but in the abdominal cavity, thus differing only from the ligature of the ovarian pedicle in its position with regard to the peritoneum; in the case of the artery the ligature is in the subserous tissue; in the case of the ovarian pedicle it is lying on the endothelial surface of the peritoneum. He thought that in this fact was to be found the explanation of this apparent discrepancy.—Mr. EVE had

examined the pedicle of an ovarian tumour one year after operation, and found the ligature disappeared all but the knot. What fibres remained were infiltrated with leucocytes, which he imagined probably absorbed the silk.—Dr. BARCLAY, referring to the early treatment of the case, said that in his own experience restricted diet had no effect in aneurisms; rest and a generous diet were the chief measures he relied on.—The PRESIDENT said that Dr. Barclay had raised an important question, for his views were opposed to those put forward by Mr. Tufnell and others. He himself had just seen a patient with intrathoracic aneurism who had been on restricted diet for four months, and having seen the case six months ago he could say that no extension of the aneurism was apparent. He hoped that Dr. Barclay would bring forward some cases on this point, in order that the subject might be debated.—Mr. CLUTTON, in reply, said that it seemed on microscopical examination as if some of the silk fibres had disappeared. In Professor Lister's cases, where ligatures were examined some months after their application, none of the silk was found to have been absorbed, although it had been somewhat disintegrated. In ovarian cases the material exuded tended to organisation and not to suppuration, as occurred in the cellular tissue.

The Society then adjourned till the 19th inst.

MEDICAL SOCIETY OF LONDON.

President's Address.—Thoracic Aneurisms treated by Galvano-puncture.

AT the meeting on the 15th instant the newly elected President, Mr. J. F. Gant, delivered an address. After thanking the Fellows for the honour done him, he spoke of the catholic aims and practical character of the Society. He dwelt on the value of debate in challenging new facts and criticising hypotheses based on imperfect observation; remarking that the suggestive work written by Dr. Whewell on the "History of Scientific Ideas" might well be supplemented by a treatise on the "History of Scientific Errors." He believed that many of the quasi-facts of pathology had been grounded on erroneous inferences from physiology, whereas pathology was in a sense but a part of physiology. Accuracy of observation was hampered by the complexity of the phenomena of disease, and the modifications necessarily induced by treatment. The modern tendency was towards the more exact diagnosis of diseased states, which he illustrated by the discrimination of the forms of morbid condition underlying a white swelling of the knee, the differentiation of the continued fevers, and of the varieties of pulmonary phthisis. In therapeutics the analysis of complex diseases was of great service, enabling the practitioner to adopt a rational line of treatment, and to estimate the value of his remedial agents. In surgery the conditions of disease or injury appropriate for this or that line of treatment were of much importance—e.g., the selection of cases of joint disease suitable or unfit for excision; the question whether in a case of compound fracture or dislocation, recourse should be had to primary or secondary amputation; or the comparative merits of alternative methods of treatment involved the pathological conditions which should determine the choice of one or other procedure. Many such comparisons admitted of yet further inquiry—e.g., the treatment of aneurism by compression or ligature; herniotomy with and without opening the sac; the treatment of internal hæmorrhoids with prolapsus by ligature or cauterisation. The respective merits of lithotomy and lithotrity in particular circumstances had not yet been decided, especially since Bigelow's method of litholapaxy had placed lithotrity more on a level with lithotomy. The various methods of treating urethral stricture illustrated the same point. The simplification of surgical treatment; the consideration of new methods, and especially the value or need of the Listerian method of antiseptic surgery, were matters still open to examination. In conclusion, Mr. Gant said—"I need only remind the Society of its high functions, as a court of scientific and practical inquiry for the advancement of medicine, in its widest acceptation, ever remembering, also, the legal maxim—that 'it is the province of reason to sit in judgment upon evidence, and the perfection of reason to form a right judgment.'"

Dr. W. M. ORD read a paper on a case of Aneurism of the Aorta treated by Galvano-puncture, with some observations on thoracic aneurism. The aneurism was of the globular kind projecting strongly forward in the angle between the right clavicle and the sternum. It was very thin-walled, and as the skin was tense over it, though as yet nowhere adherent, the danger of the occurrence of adhesion and rupture externally was imminent. In the operation, which was performed by Mr. Mason, two needles, partially sheathed with sealing-wax, were introduced into the tumour at different points and then connected with the negative pole of a Foveaux's battery, the circuit being completed by the application to the skin of a sponge connected with the positive pole. Six cells of the battery were used at first, and the number was gradually increased to twenty-two, which, causing too much distress, were reduced to eighteen. About forty minutes after the commencement of the operation signs of cauterisation appeared around the needles, and their insulation was found to be destroyed by the current. They were soon afterwards withdrawn. Sloughs subsequently formed at the punctures, but were superficial and came away within a fortnight, leaving healthy surfaces. The tumour became distinctly firmer during the operation, and continued to increase in firmness afterwards, undergoing also a distinct reduction of bulk in all dimensions. The patient also improved in health for a month, and it was proposed to repeat the operation when symptoms of occlusion of the innominate artery appeared, and he died on the forty-ninth day after the operation. The aneurism was, after death, found to be partially coated internally with a thick, firm clot, thicker at the punctures than elsewhere, forming a valuable protecting pad within the very thin walls of the sac. A process, which if it had continued would probably have proved curative, had clearly been established. The blocking of the innominate was due apparently to thrombosis, not embolism, a fresh clot projecting from the mouth of the vessel into the sac. In regard to the operation, the paper pointed out that the object at first proposed was attained in the prevention of further outward progress. The failure of the insulation was clearly due to the medium used. Vulcanite, as recommended by Dr. Duncan, is the best—perhaps the only suitable—material. The use of ergot in the treatment of aneurism was then discussed. Dr. Sibson had made many experiments on this subject, many of them in conjunction with the author; with the aid of the sphygmograph and cardiograph it could be shown that arterial tension was generally increased and the pupils dilated after the administration of ergot, and that in many aneurisms a temporary reduction of the sac and range of movements of the sac was effected. These statements were illustrated by several cases, in all of which the use of ergot had been attended with great relief of all symptoms referable to pressure of the sac on surrounding parts. But it could not be shown that ergot had exerted in any instance a curative influence, so that it could only be regarded as a valuable palliative, an adjuvant to more effective treatment. The diagnosis of aneurism, as illustrated by cases under the author's care, was then partly considered. The value of the sign of pulsation, and the means of diagnosing the pulsation of aneurism from that of solid tumours in the chest or its walls, and from pulsations produced by adhesions and displacements of the heart, were then discussed. Next, the contraction of the pupil of one eye, often observed in thoracic aneurism, in relation with paralysis of the cervical sympathetic. And, lastly, the destructive inflammations of lungs and pleura frequently arising in aneurism were considered in relation to their causation, pressure upon pneumogastric and pulmonary plexuses being regarded as the probable cause of the most destructive forms of inflammation, and the question of pressure on ganglia of roots of special nerves being a cause of pleurisy in some cases was raised.—The PRESIDENT referred to a similar case treated by him by galvano-cautery, in which a fatal result ensued. There was no autopsy.—Dr. HUGHES BENNETT believed the unfortunate issue of most of the cases so treated to be due to the serious nature of the disease itself, and the fact that this method was only resorted to after other modes of treatment had failed, and he advocated an earlier resort to galvano-puncture in aneurism. At the present time he had under his care at Westminster Hospital a case of thoracic aneurism, which was so far doing well. He employed steel flat-headed needles insulated by glass, and he advised the use of a rheostat for regulating the current, as it allowed of the employment of strong currents with apparently little or no injury.—Dr. DE HAVILLAND HALL asked Dr. Ord why he

gave digitalis. Would it not tend to lead to greater distension of the sac by increasing the force of the cardiac systole?—Dr. HEYWOOD SMITH said that in a case of thoracic aneurism now under his care he had been advised by Dr. A. Clark not to give ergot, lest the heightened arterial tension in the small arteries should prejudicially affect the tumour.—Dr. ORD reminded the Society of the method of treatment which had been successful in some cases, advocated by Mr. Tufnell of Dublin. He agreed that it would be well to resort earlier to galvano-puncture than was usually the case, and Dr. Duncan considered insulation of the needles by glass to be useless, owing to its liability to break. Digitalis was given to strengthen the action of a weak heart. It had been shown by Dr. Sibson that diminution in the size of the sac followed the use of ergot, and he suggested in explanation of this a possible moderating action on the ventricular systole.

ASSOCIATION OF SURGEONS PRACTISING DENTAL SURGERY.

AT the meeting of this Society on February 18th, after the annual address given by the President (W. A. N. Cattlin, F.R.C.S.), Mr. HAMILTON CARTWRIGHT opened a discussion "On the means of Diagnosis afforded by an Examination of the Teeth and Mouth in the doubtful cases of Constitutional Disease." He desired to show how some knowledge of dental lesions might be of the greatest service to practitioners of medicine and surgery, whilst at the same time the qualified surgeon practising dentistry might give valuable aid to his *confrères* in many dubious cases. The first subject he wished to draw the attention of the Fellows to was that of neuralgia connected more especially with the head and neck, which he divided into supra-orbital, infra-orbital and facial, mental and cervico-facial. His contention was that there is no such disease as idiopathic neuralgia; that a cause for it is invariably to be found, whether it be in connexion with the impressions created on the nervous centres by the ovum in the womb, or by the diseased tooth. He then combated the theory, that in ordinary cases there is any degeneration of the *posterior* roots of the spinal nerves, proving his hypothesis by many examples of sudden and complete cure on the removal of an exciting cause of pain. Though the teeth were very frequently the originators of a spurious kind of neuralgia, he thought that they were very often unjustly blamed and sacrificed. In speaking of the *loci* of neuralgic pain he hazarded the theory that the symptoms of neuralgia were in no small number of instances owing to pressure on the main branch of a nerve caused by exostosis around the edges of the foramina through which they pass. He then gave the means of diagnosing between pain due to dental causes, and that caused by lesion of the nervous centres, or by that of special nerves, maintaining that by a process of elimination it was easy to prove whether the teeth were at fault or not. He then alluded to the subject of gout, showing that there was a special condition of the teeth and oral mucous membrane by which the disease might be diagnosed, and even anticipated in hereditary cases. He then entered upon the signs of syphilis seen in the mouth, as those of rickets, phthisis, and dyspepsia, concluding an exhaustive discussion with the signs of scrofula and struma in the glands, laying great stress upon the fact, that a lack of knowledge of the elements of dental surgery, such as might be acquired in any general hospital, frequently was the cause of glandular abscesses being treated as scrofulous, and which were entirely owing to causes connected with the teeth.—The PRESIDENT thanked Mr. H. Cartwright for the clear and able manner in which he had brought forward a very interesting subject, and quoted several published cases to support Mr. Cartwright's theory that the local cause of facial neuralgia was often to be found in a remote part, and *vice versâ*. He instanced the case published by Sir Charles Bell, in which an ulcer of the stomach had caused facial neuralgia, and others mentioned in Sir Henry Halford's Essays, in which osseous deposit on the crista galli of the ethmoid bone had produced the same effect. Perhaps the most interesting cases he could refer to of pain in remote parts produced by irritation of the pulp or nerve of a tooth, was one published by the late Mr. Sercombe, in which severe spasm of the uterus was clearly traced by experiment to the exposed pulp of a tooth. He thought facial neuralgia was more frequently to be traced to the gouty diathesis and an anæmic condition of the blood than Mr. H. Cartwright supposed, although cases of neuralgia from constitutional causes were by far the most rare, and Dr. Fothergill had shown that they were common in malarious districts.—Mr. FRANCIS MASON dwelt upon the importance of distinguishing syphilitic from other diseases of the cavity of the mouth, and remarked that the commonest form of secondary eruptions in that cavity was found in a raised whitish patch, somewhat indented from contact with the teeth, and situated inside the cheek near the angles of the mouth on both sides. He believed that in the true syphilitic sore-throat such patches were observed either over the tonsils, or extending as crescentic elevations on the soft palate. If the tongue were affected the patches were chiefly on the sides of the organ, and indented from contact with the teeth. He believed that this peculiar raised condition, due to the effusion of lymph, so characteristic of true syphilis, was much more commonly to be observed than the deep excavated ulcer. He further remarked that it was customary at the present day to attribute all cases of exfoliation of the palate and nasal bones to syphilis. His own experience led him to believe that in by far the majority of such cases there was no history whatever of true syphilis.—The PRESIDENT assumed that Mr. Mason attributed necrosis of the bones of the nose and other parts more to the abuse of mercury than syphilis, although he had not actually said so.—Mr. MASON agreed that the awful destruction of the bones of the face and soft parts, as occasionally seen in former years, but now, happily, illustrated only in our museums, was due not to syphilis, but most probably to the wholesale administration of mercury for its supposed cure. Lastly he urged the importance of making a correct diagnosis, and instanced some cases in which the mere eruption of a wisdom tooth had been mistaken for syphilitic sore-throat, and had been treated accordingly.—Mr. EDGELOW considered that neuralgia had always some positive cause, and narrated a case that had come under his notice at St. George's Hospital in which exostosis of the fang of a tooth had caused severe pain in the hand, which subsided at once on the extraction of the tooth.—Mr. RANGER stated that in two cases which he had recently met with at St. Thomas's the same result followed. The first case was that of a young man who suffered extreme pain in the right arm and down to the hip-joint. He found a lower bicuspid very much decayed, and on destroying the pulp with arsenic the pain ceased almost immediately. The other case was that of hysteria in a girl, when on removing a lower bicuspid, much decayed, the same result followed.—Mr. HAMILTON CARTWRIGHT briefly replied.

CAMBRIDGE MEDICAL SOCIETY.

Deficiency of Bone at Vertex of Head.—Cases of Undescended Testicle.—Relation of Local to General Tuberculosis.

AT the meeting on Friday, March 5th (Professor Humphry, M.D., F.R.S., Vice-President, in the chair), Mr. WHERRY brought forward a patient with Deficiency of Bone at the Vertex of the Head. The patient is a man, aged sixty-two. There are irregular deficiencies in the skull-cap, the largest of which is on the left side of the sagittal suture, and measures two inches and a half in the long diameter. The edges are irregular, and the gap is crossed in the middle by a narrow bar of bone, apparently belonging to the outer table. There is no scar in the skin, nor any sign of inflammatory thickening. The depth of the hollow is greatest on the side nearest to the suture. The inner table cannot be felt to be perforated at any spot. Venous blood fills the gap when he is made to stoop; the swelling is felt to bulge under the hand, and fluctuation may be made out under the bridge of bone that crosses the gap. The blood that can be made to enter the hollow is presumably in communication with the veins of the diploë. The lesion may be taken to be absorption of the outer table. There is a slight depression in the left frontal region, which also feels as if it were occupied by veins. He has had tenderness of the scalp for twenty years, and he has observed the present deficiency becoming gradually larger. His memory is somewhat impaired, and he suffers from headache to such a degree that he has given up his work

as a cellarman. He is the father of nine children, the first six of whom are alive, and there is no suspicion whatever of syphilis. He has, besides, a lobulated tumour, the size of an egg, near the tuberosity of the right upper jaw, and extending towards the hard palate; also double hernia. Mr. Wherry pointed out that the deficiency of bone in this case was different from that in another class of cases where the inner table was first absorbed by pressure of the Pacchionian bodies, and subsequently more or less of the outer table. He quoted a case of the latter kind reported by Meschedes in Virchow's *Archiv.*, vol. lvii., 1873; the deficiency, as in the present case, existed in the parietal bone, to the left of the sagittal suture; it was found, after death, that the inner table had disappeared, and part of the outer, and the cavity was occupied by a sac filled with blood-clot and communicating with the longitudinal sinus by an irregular opening. The patient had suffered from melancholia and epileptic fits over a period of thirty-one years; the case was regarded as one of varix of the longitudinal sinus.—Dr. HUMPHRY had had his attention directed for a long time to these cases of deficiency in the outer table of the parietal bone, but he had formed no opinion as to their origin. He had referred, in his "Treatise on the Human Skeleton," to the specimens of the deficiency that he had seen in museums; one had been placed in the Cambridge Museum by the late Professor Clark, in which there was a deficiency in the outer table of the parietal bone of each side, with no evidence of disease preceding. In the Museum of St. Thomas's Hospital there was a similar specimen catalogued as "Successful healing after Trephining," and it so happened that the exactly corresponding piece of bone in the parietal of the other side was sawn out. He had observed the other day, in the index to a German work, a reference to "senile atrophy of the parietal bone," which might be the same condition under another name.

Mr. CARVER gave an account of two cases of Undescended Testicle in well-developed young men. In the one case the half-sized left testicle lay just within the external ring, which was open. The scrotum of that side was represented by a small sac, the size of a cherry, into which the testicle could readily be brought. Some fluid remained in the sac after the testicle was returned through the ring. A horse-shoe truss was recommended to be worn in such a way as to keep the testicle from ascending through the ring. In the other case the external ring was closed, and the scrotum of that side undeveloped. The testicle had been apt to come down in childhood; it had appeared in the canal again at the age of fifteen, and two or three times since (when the truss had been laid aside), and its presence in the canal gave rise to violent pain of a sickening character, which an ice-bag relieved instantaneously.—Dr. HUMPHRY pointed out that the testicle is the only organ of the body which changes its place, and it appeared that it did not acquire its proper function unless the change of position occurred. The undescended testicle, in one of the museum specimens, contained only sperm cells. In some animals the periodical activity of the function was associated with appearance of the testicle outside the abdomen.—Mr. CARTER remarked that it was a common belief among grooms that a horse, in which only one testicle had descended, and that had been removed, might still be fertile with the undescended testicle.

Dr. CREIGHTON showed the organs and microscopic specimens from two cases illustrating the relation of Local to General Tuberculosis. In the first case the primary disease was cystitis (the interior of the bladder being covered with strips of caseous epithelium, like shreds of lymph), and caseous thickening in the pelvis and calyces of one kidney, the whole length of ureter intervening being enormously dilated, and its walls thickened and caseous. Both lungs were full of grey translucent miliary tubercles, and were otherwise perfectly healthy. The other kidney was also sound, but contained a very few small white tubercles, at wide intervals, in its substance. Sections of a small projection of substance in the pelvis of the primarily affected kidney, being the apex of a pyramid with a thick coating of caseous epithelium, showed, under the caseous surface, the characteristic embryonic connective tissue, and, here and there, the giant-cells of tubercle. The tissue so made up extended uniformly over the whole affected surface. The caseous layer on the surface contained opaque necrotic masses corresponding in their size and isolation to giant-cells. The lungs contained precisely the same tissue elements in the form of the small miliary nodules. The miliary tubercles are secondary, and their structure is simply a mimicry of the primarily diseased tissue, just as the structure of nodules in the liver, secondary to a cancer of the stomach or rectum, is an exact mimicry of the diseased structure in its primary seat. The second case was one of bronchiectasis, with caseous peribronchitis and broncho-pneumonia, for the primary disease, confined to one lung; and, for the secondary disease, grey translucent miliary tubercles both in the sound lung and also in the primarily diseased lung, and in the immediate neighbourhood of the caseous bronchiectasis. In the deeper and not yet caseous layer of tissue that formed the thick walls of the dilated bronchi, embryonic connective tissue and giant-cells were found. The occurrence of the same structure in the miliary tubercles of the functionally sound lung is attributable to infection and to mimicry of the primary diseased tissue by the secondary. In the case of cystitis and pyelitis, the primary disease would doubtless be referred to the category of inflammations, the product becoming caseous; but in the case of bronchiectasis there would be a disposition to call the disease tubercular in its primary as well as in its secondary form. The modern school of French pathologists claimed that they had resuscitated Laennec's pathology of pulmonary phthisis. They found the same structural elements in common phthisis of the lung, the "infiltrated" tubercle, as in the miliary tubercle. But they analysed the so-called infiltrated tubercle into nearly the same factors as Virchow, twenty-five years before, had resolved it, the chief of these being *peribronchitis caseosa*, and next to that caseous catarrh of the epithelium both of the bronchi and of the alveoli. Laennec, on the other hand, said (as quoted by Niemeyer): "Pulmonary phthisis is a constitutional disease; it can never develop itself out of acute or chronic pneumonia, or take its rise from a bronchial hæmorrhage or from a neglected or protracted cold." The structural features of the local or primary tuberculous tissue are not very different from those of anæmic or fungous granulations, which arise as a sequel to inflammation. Dr. Creighton referred to and showed the specimens illustrating two papers in the *Journal of Anatomy and Physiology* for January, 1879, in which he had pointed to the giant-cells found in the deeper layers of the placenta as the physiological type of the giant-cells of tubercles and granulations. In the placenta they had an obvious vaso-formative significance, and it happened, even in the normal placenta, that when they failed to form themselves into new bloodvessels, they suffered a necrotic or caseous break-up. Precisely the same giant-cells occurred in granulations and tubercles, and, on the pathological evidence alone, it had been concluded by Brodowski, Ziegler, and others that they stood for pieces of abortive blood-vessels. In the well-marked class of scrofulous subjects, the products of inflammation, whether granulation-tissue in the strict sense only, or also in an extended sense, are apt to fail in attaining to that rich vascularisation which all granulation-tissue requires if it is to heal well; and the occurrence of giant-cells was the evidence and the index of the feeble power of the new tissue to provide itself with blood. The tissue in which they occurred differed from simple inflammatory tissue only in degree and not in kind. It might be conveniently called tuberculous; the name which had been from the earliest times universally assigned to what was in reality the secondary disease, might be extended to the primary or parent source of the disease. It was due to the remarkable principle of structural mimicry, which was somehow part of the essence of infection, that the miliary nodules, occurring in an organ functionally healthy, were made up of exactly the same kind of tissue as had grown up, for sufficient reasons, in the local disease. The mimicry of infection is best seen in tumour-infection. The lungs were especially liable to be the seat of infection from caseous centres, just as they were the favourite seat of infection from sarcomatous tumours. The question had been complicated by the circumstance that the lungs are themselves also the most liable of all organs to those caseating inflammations from which the miliary infection springs.

VACCINATION GRANTS.—The following gentlemen have received Government grants for efficient vaccination in their respective districts:—Dr. M. Coote, of the Nos. 2 and 3 districts of the Ashby-de-la-Zouch Union, £11 12*s.*; Mr. Edward Chesman, Hanlister District of Knighton Union, £6 12*s.*

Reviews and Notices of Books.

Paracentesis of the Pericardium: A Consideration of the Surgical Treatment of Pericardial Effusions. By JOHN B. ROBERTS, A.M., M.D., Lecturer on Anatomy in the Philadelphia School of Anatomy, &c. Philadelphia: J. B. Lippincott & Co. 1880.

IT is perhaps surprising that while tapping the pleura or peritoneum is so generally practised, and has been the subject of quite an extensive literature of its own, the operation on the pericardium has received but little attention. This has no doubt arisen partly from a fear of the evil consequences that might be expected to follow surgical interference with the heart or its serous covering, and partly from the fact that the cases calling for such active treatment are not of frequent occurrence, and are too often complicated with other such serious lesions that the operation holds out but small hope of cure. Dr. Roberts has considered the whole subject in a very impartial manner in the book before us, and has laid clearly before his readers both the immediate and subsequent risks of the operation. In a table of sixty cases in which the operation has been performed, the author includes all of which he has been able to get a satisfactory record, so that the material for forming an independent opinion is also provided. The operation can never, perhaps, take rank among the more brilliant feats of surgery, although certainly one of its boldest triumphs, for, as we have just stated, while in many cases it may serve to prolong life and give ease, in only some of these will a permanent cure be possible, the complicating conditions in others being too serious to permit of it. Dr. Roberts recommends that the operation be performed in the fifth interspace, about two and a half inches from the middle line of the sternum, and rejects altogether, and we think with good reason, the plan urged and practised by some, of entering the pericardium close to the sternum, to the inner side of the internal mammary artery. The danger to be feared and avoided is that of wounding the pleura, heart, or mammary artery. The pleura and artery are out of the way of harm if the puncture is made where Dr. Roberts advises. The heart may be adherent, and, therefore, liable to be wounded, and it is difficult or impossible to determine this beforehand. We would urge, therefore, that a preliminary puncture be always made with the fine needle of a hypodermic syringe; it could do no harm, and would at once demonstrate the presence of fluid if it exist.

A Description and Explanation of the Method of Performing Post-mortem Examinations. By Professor RUDOLPH VIRCHOW. Translated from the second German edition by Dr. T. P. SMITH. London: J. & A. Churchill. 1880.

THIS second edition of a most useful manual from the pen of a master differs from the first in the addition of notes of one or more cases illustrative of the method followed in the examination of the body, and some further remarks on the plan of opening the thorax. The value of this little book may be said to be in inverse proportion to its size. For thorough and systematic method in the performance of post-mortem examinations there is no guide like it, and we notice some points in which the method recommended differs from that usually in vogue in this country. The time allowed for a complete examination is three hours, and it would be well indeed if it were possible for every post-mortem prosector to give so much time to the examination of a single case. Under prevailing conditions, however—to which we need not particularly allude—it is plain that three clear hours are seldom at disposal. And herein, perhaps, lies the explanation of many regrettable deficiencies in the records of such examinations. The main object of the book is to lay down systematic rules for examination of cases of medico-legal bearing, but it is wisely urged that the same care and circumspection followed in such cases should be applied to all.

Transactions of the Clinical Society of London. Vol. XII. Longmans. 1879.

Index to the Clinical Society's Transactions. Vols. I. to XII. Longmans. 1880.

THE twelfth volume of the above Transactions fully maintains the credit of the Society whose work is here recorded, and in some respects it is more full of interesting and instructive matter than some of the recent volumes. We miss, however, papers of the elaborate extent with which the earlier years of the Society were occupied, although we have a collection of rare and interesting cases illustrating points of diagnosis and treatment. The present volume is especially rich in cases of intestinal obstruction, including conditions due to cancer of the bowel, to fibrinous exudation within it, impacted gall-stone, and intussusception. The subject of Ogston's operation for genu valgum appears in two papers, that of nerve-suture in another, and that of "litholapaxy" in one by the introducer of this adjunct to lithotrity. There is also the record of a case of gangrene of the lung treated by incision, the illustration accompanying it showing the correctness of the diagnosis, and the accuracy of the incision. Such are a few of the cases recorded before this Society. There is no need to dwell on them here; they have been sufficiently described and commented upon already within our columns.

The general Index to the first twelve volumes of the Transactions has just been issued, and will prove of great service to all clinical inquirers. It has been carefully compiled by Mr. Wheatley, a sufficient guarantee of its accuracy and admirable arrangement.

OUR LIBRARY TABLE.

The Micrographic Dictionary. A Guide to the Examination and Investigation of the Structure and Nature of Microscopic Objects. By J. W. GRIFFITH, M.D., and ARTHUR HENFREY, F.R.S., F.L.S. Third Edition. Edited by J. W. GRIFFITH, M.D., Professor MARTIN DUNCAN, M.B., F.R.S., F.G.S.; assisted by the Rev. M. J. BERKELEY, M.A., F.L.S., and T. RUPERT JONES, F.R.S., F.G.S. Illustrated by 48 plates and 812 woodcuts. London: J. Van Voorst.—This standard, but not sufficiently known, work, well deserves a passing notice as occasion offers. It is one of the books of reference with which every library table should be supplied. The plan is excellent, the descriptive text well compiled, and the illustrations are of great practical value. The only desideratum is a sale so extensive that a new edition may be issued bringing the book up to date each year. The work is of such value that an effort to secure its dissemination through the widest sphere seems in every way desirable.

Annals of the Anatomical and Surgical Society. Vol. I. 1878-9. Brooklyn, N.Y.—The record of work done contained in this volume is highly creditable to this young Society, and promises well for the future. Many interesting specimens and cases are reported, and two or three careful papers are found printed in full. Perhaps the greatest interest attaches to the description—very complete—of the fissured sternum of the late Dr. E. A. Grouse, who was good enough to exhibit himself to several London physicians and surgeons when he was in this country.

Notes on Diseases of the Testis. By SAMUEL OSBORN, F.R.C.S., late Surgical Registrar to St. Thomas's Hospital. London: J. & A. Churchill. 1880.—This is a small volume, uniform with the author's work on hydrocele. It consists of short chapters or essays on the common injuries and diseases of the testicle.

THE LANCET.

LONDON: SATURDAY, MARCH 20, 1880.

THE Naval Medical Service does not present a pleasing spectacle. Estimated to have 476 members it has only 405, and when candidates are once more flocking to the Army there are but five found willing to enter the sister service, where there stand two Inspectors-General, representing four of the rank. There is a lowest depth to all misfortunes, at which sometimes amendment will begin, and therefore we entertain hopes that, stirred by the action of the War Office, the Admiralty will set to work to bring its service up to the proper level. As in 1865, a Committee has been appointed to inquire into the position of the medical officers of the Navy, and it is composed of representatives of each grade of executive officers, exclusive of the administrative. The results of the last Committee were not eminently successful in removing dissatisfaction, because it contented itself with recommending compromises where thorough reforms were needed, and the Order in Council framed on its recommendations was in the same spirit. With all its imperfections, however, it might have stood till now but for the issue of retrogressive circulars undermining the reluctant concessions, or retarding their practical application, and nowhere was the tergiversation more conspicuous or more irritating than in the matter of cabin accommodation. The usual signs of discontent accordingly revived, and no higher views of adequate means for appeasing it seem to have dwelt in official minds than to hold out an additional shilling per day for the first five years after entry, and the same increase each year to those grumbling within their dark and ill-ventilated cabins. The panacea not being found in these gratuities to the juniors, a raid was begun on the position and claims of the administrative ranks.

An Order in Council is in reality an emanation from the State Office that propounds it, although it is ostensibly a display of the Royal prerogative, which ought to be carefully surrounded with at least an appearance of justice. But when subsequent Orders in Council are soon discovered to be expedient to correct or explain its provisions, it may be safely inferred that the original was an instance of departmental maladministration that had dragged prerogative unnecessarily through the mire. If there be one thing more capable than others of checking a tendency to equilibrium in a public service, it is the frequent issuing of Orders in Council, keeping all serious interests in a state of uncertainty. The past ten years have been thickly strewn with such instruments, and with Admiralty Circulars; and all alike have been surprises, concocted without previous ventilation, that might have brought home to the Admiralty a knowledge that would have precluded grievances they would not have inflicted wittingly. Such was the case in 1869, and again in 1875, when, by an arbitrary act, the active-service life of administrative officers was reduced from sixty-five to sixty years, without option or retrospection, and without compensation to the most senior of them, as in the Army, and in every other department of the Royal Navy. Whatever public good may be hoped for in making organic changes, our English plan is to respect all antecedent claims, and to treat men fairly. This, however, we fear, was not the guiding principle on the occasions referred to, but the Nemesis which, sooner or later, balances all human transactions has brought utter confusion into the ranks then disturbed by a measure tainted with unfairness to some well-tried servants.

The policy hitherto acted on has displayed blindness to one great fact—namely, that since the passing of the Medical Act in 1858 every medical practitioner must possess legal qualifications, and that only such can enter the public service. Formerly those who had served in the Navy were privileged to practise on shore, without passing other examinations. The Admiralty have to realise these altered circumstances by treating even its most junior medical officers in every sense as professional men, entitled to cabin accommodation, and to all allowances, whether afloat or on shore, in full accordance with the principle of relative rank. A retrospect of the past twenty years will disclose instances of disabilities and inconveniences submitted to by medical officers, comparatively greater in degree than those which other professional officers, educated like them at their own charge, are called upon to endure. The War Office has with good grace recognised that principle of the substantive value of relative rank in all its bearings, and the sooner the Admiralty admits its importance the better it will be for the internal peace of the great national service they govern.

We have endeavoured to present, in articles which have appeared in our columns (THE LANCET, Feb. 21st and March 13th), as we conceive, the causes of the existing collapse, and to suggest principles on which alterations should be made. We will now submit a summary of what measures are, in our estimation, needed to reassure the profession, and to bring the Naval Service into a position of equality with that of the Army. This is a matter of importance to the public service, and it is therefore to be hoped that the views we support will be considered by the Committee now convened to examine the entire question.

The great fact that cannot be safely ignored is, that superior inducements must be given to draw young surgeons into the Navy, and to keep them contented with it; but it must be remembered that such a state of satisfaction is dependent, in no small degree, on the manner in which the balance is held between it and the sister service. We are impressed with this in offering our suggestions.

Professional qualifications and *special training at Netley*, before appointment, to be as at present. Surgeons, after six years' full-pay service or four years' foreign service, to be allowed to attend a course of lectures at Netley, on full pay, in order to qualify themselves for examination.

Promotion of Surgeons to the rank of Staff-Surgeon to be after ten or twelve years' full-pay service, of which five or six years have been served abroad; the required examination being passed. Staff-Surgeons to become Fleet-Surgeons after eighteen years' full-pay service, of which at least ten years have been passed abroad. Fleet-Surgeons to be eligible for Deputy Inspector-General after twenty years, with twelve of foreign service. Deputy Inspector-Generals to be eligible for the rank of Inspector-General after service of five years

at home or three in a fleet or foreign hospital. Promotion to administrative ranks to be *by selection*.

The office of Director-General being now recognised as one appertaining to the Active List, the appointment should not be held longer than five years, subject to the ordinary regulations for retirement.

Special promotions to be given, as at present, for meritorious service or conspicuous ability, provided that the officer has completed the ordinary qualifications. The immediate reasons for such promotions always to be gazetted together with the promotion.

The age for compulsory retirement of Fleet-Surgeons to be fifty-five instead of sixty years. But medical officers who were on the Lists on the 1st April, 1870, and have attained, or shall attain hereafter, the rank of Fleet-Surgeon, to have the option, if not otherwise disqualified by the Order in Council of the 22nd February, 1870, of remaining on the Active List until sixty, to be retired then on the scale in force. But, as a compensatory inducement to earlier retirement, such officers may be permitted to go on the maximum pay of their rank on the completion of twenty-five years of full-pay service.

The full and half pay of all grades of surgeons to be equivalent to the scales in vogue for the Army, with allowance for time lost compulsorily on half pay, in accordance with Order in Council of 1806—viz., four years of full pay as Staff or Fleet-Surgeon to count as five years.

Retired pay of the same grades to be computed so that at the same ages medical officers of the Navy may be enabled to retire voluntarily on the same pay as those of the Army.

The equivalents of the rank and emoluments of Brigade-Surgeons to be established in the Navy.

The pay—full, half, and retired—of the administrative medical ranks of the Navy to be assimilated to those of the Army on the above principles, to assist in adapting which tables have been already proposed.

Orders in Council and Admiralty Circulars on the above points, to afford compensations, as by Article 31 of Royal Warrant for the Army dated November 27th, 1879.

The pensions of widows of Deputy Inspectors-General to be the same as those of widows of captains—viz., by seniority, and not by full-pay service of the deceased officer.

All allowances to be guided by relative rank with the military branch of the naval service.

Cabins to be allotted by seniority of relative rank, with exception of the senior executive and the senior navigating officers.

Fleet-Surgeons on retiring to receive on retirement, if recommended, a step of honorary rank; and if not recommended the reasons to be made known on appeal by the officer to the Admiralty.

Good-service pensions to be awarded in accordance with the honorary distinctions officers may have received as recognitions of meritorious services, assuming that such distinctions are to be considered official *bonâ-fide* marks of approval of, and not merely nugatory rewards for, good services.

A REPORT by Dr. BRIDGES, of the Local Government Board, on Small-pox in the Hospitals of the Metropolitan Asylums Board, from 1876 to 1878, has been issued as a Parliamentary Paper. It is a document of quite exceptional interest, and this, perhaps, not so much from what it contains as from what it omits. As regards Poor-law administration, the Report doubtless fulfils its purpose; as regards public-health administration it is singularly inadequate, and makes abundantly evident that, notwithstanding the union of the two administrations under the Local Government Board, there is no amalgamation even in matters where such amalgamation would seem most desirable. Dr. BRIDGES, as one of the inspectors of the Board for Poor-law purposes, in dealing with the subject of his Report, is obviously working in shackles. The question of small-pox in the Metropolitan Asylums Board hospitals, although primarily, and so far as he is officially concerned wholly, a question of Poor-law administration, assumed in the epidemic last past, as well as in the epidemic of 1871–72, a public-health aspect which completely overshadowed its true Poor-law character. Dr. BRIDGES appears to have been unable to avoid touching on many points of the public-health bearings of his subject, but his method of dealing with them suggests that they were, as might be expected, foreign to the considerations which would enter into the administration of the Metropolitan Asylums Board hospitals, and generally into Poor-law matters, lacking much that the public, unable or unwilling to discriminate between Poor-law and public-health functions, will not unnaturally look for from his pen.

The recent epidemic of small-pox in the metropolis was of considerably less magnitude than that of the epidemic immediately preceding. During the three years 1870–72 there died of small-pox in London 10,615 persons; during the three years 1876–78, 4695. Between December, 1870, and April, 1872—a period of seventeen months—13,905 cases were admitted into the Metropolitan Asylums Board hospitals, as against 13,377 in the thirty-six months of 1876–77–78. Dr. BRIDGES notes the tendency of small-pox to prevail in the metropolis with increased intensity at intervals of three or four years. The epidemics of 1870–72 and of 1876–78 were no exceptions to this rule of recurrence. But nothing like them as to virulence has been seen since the end of the past and beginning of the present century. So far as the mortality from the disease is concerned, the two last epidemics have thrown the metropolis back in this respect three-quarters of a century. It does not appear from Dr. BRIDGES' report that the vast experience of the disease in the Metropolitan Asylums Board hospitals has thrown any light upon the significance of this momentous question, except to confirm the fact of the exceptional virulence of the disease; and he contents himself with the somewhat inadequate observation with reference to the mortality of the two years 1877–78 that, having regard to the increase of population between 1841 and 1877—viz., from 2,000,000 to 3,500,000—it would not appear, "at first sight," of a very alarming character.

The several hospitals (now seven in number) are arranged with a certain regard to symmetry of position round the centre of the metropolis. Although the arrangement was made in the first instance with strict regard to Poor-law purposes, there is no reason to believe that any better and more suitable arrangement could have been made had public-health purposes been solely kept in view. Dr. BRIDGES

touches on the alleged danger of a small-pox hospital to the surrounding neighbourhood, and in regard to this question he is satisfied that so far as the patient is concerned the isolation is complete, and so far as danger might arise to the outer world from the passing backwards and forwards of the hospital nurses and the visits of friends to patients, in the former case danger may be looked upon as non-existent, and in the latter case the risk is reduced to almost a vanishing point, and in both cases this freedom from danger arises from the precautions taken. He avers that the vague assertions as to the danger of these hospitals to the surrounding neighbourhood, as regards transmission of the disease from the hospital, are such as not to bear the test of careful investigation, and he remarks: "It is strange that hypothetical views as to the conveyance of microscopical spores through the atmosphere for indefinite distances should receive so much attention when perfectly simple explanations of the spread of a disease are abundant on every side." Nevertheless, he admits that there is a danger to which these hospitals give rise outside their precincts from the passage of patients to them, if the conveyance be carelessly made, which would certainly, from his showing, appear to have been too often the case. To this point Dr. BRIDGES' argument holds well together, but when he seeks to support his position by endeavouring to show what influence, if any, the presence of a small-pox hospital may have exercised upon the mortality of the *registration subdistrict* in which it lies, he gets upon doubtful ground. He gives a table of the mortality from small-pox in each of the registration subdistricts for London for 1871 and 1872 and for 1877 and 1878, and from it is to be gathered that of the several districts in which hospitals are situated, Hackney (Homerton Hospital) had in both epidemics a mortality considerably above the average; Lambeth (Stockwell Hospital) in both epidemics a mortality but very slightly above; Hampstead (Hampstead Hospital) in each epidemic a mortality much below; Fulham, Chelsea, and Kensington (the Fulham Hospital on the confines of the three districts, and in use in 1877–78, but not in 1871–72), the first-named district a mortality very slightly above, the two last-named a mortality less than the average; and Greenwich (Deptford Hospital, opened in 1877–78) a mortality little more than its due proportion. In the epidemic of 1871–72 the chief pressure fell upon Shoreditch and Bethnal-green; in 1877–78 upon Stepney and Poplar — districts which have no small-pox hospitals within their boundaries. From these results, Dr. BRIDGES concludes that they "afford on the whole no ground for the conclusion that the hospitals concentrate in their neighbourhood a larger proportion of disease than would otherwise have been found there." This conclusion goes beyond the legitimate showing of the figures. Read "registration subdistrict" for "neighbourhood" and Dr. BRIDGES is right. "Neighbourhood" has a much more restricted signification than district. We are not aware that it has ever been asserted that the presence of one of the Metropolitan Asylums Board hospitals increased the prevalence and augmented the mortality of the *district* in which it lies. The allegation is that they have increased the prevalence of small-pox in their immediate neighbourhood. Dr. BRIDGES' remarks on the conveyance of patients to them lead to the inference that he is by no means satisfied that *indirectly* they may not have contributed to a greater prevalence of the disease about them. *Directly* we feel assured that such has not been the case. But the question is one which requires to be dealt with by inquiry and observation, and we fear that such inquiry and observation into the occurrence of small-pox in the neighbourhood of their hospitals have not been held by the Metropolitan Asylums Board to come within their functions. Clearly, it is a public-health and not a Poor-law question; and how it comes to pass that a matter of so much importance, and which has involved so many and such serious considerations, has not been taken up by the Local Government Board, as the central sanitary authority of the kingdom, in its public-health aspects, passes ordinary apprehension.

The information afforded by the Metropolitan Asylums Board hospitals as to the results of vaccination forms one of the most important yet least satisfactory parts of the report. First, these results show most conclusively that notwithstanding the greatly increased virulence of the disease, the influence of vaccination was not less marked in diminishing the mortality than in the form of small-pox more ordinarily observed; and, next, that an effective revaccination almost absolutely, if not absolutely, shielded a person from the malady. We wish that these results and their bearing upon the peculiarities of the epidemics had been somewhat more prominently dwelt upon. But Dr. BRIDGES proceeds to draw an inference of his own from certain of the results, which we cannot but think may prove highly misleading. He says: "In estimating the degree of vaccination, the first rule to be observed is that quality takes precedence of quantity. One well-pitted mark affords more protection than a large number of indistinct ones." Now, this is a remark which would almost justify the *one puncture* private vaccinator in his mischievous doings. But it is inconsistent with the data which Dr. BRIDGES advances in support of it. If in one set of the returns he gives the *one* good mark shows a greater protective result than *four* indifferent marks, in another set the four *indifferent* marks show a much better result than the one good one; while in both sets of returns the very defined relationship of good results to the quality *and* quantity of the vaccination are again made strikingly obvious. *Quality* and *quantity* of marks are of equal importance in good vaccination, and it is to be regretted that Dr. BRIDGES, in indulging in a certain antithetical form of expression, should have apparently suggested that quality and quantity may be considered apart from each other.

Dr. BRIDGES has some important suggestions concerning the conveyance of patients to metropolitan hospitals, and on ambulances, to which we may have to refer on some other occasion.

A NEW and very simple method of investigation has been introduced for the study of the place of origin of albuminous exudations. It consists in causing the rapid coagulation of the albuminous elements by heat or other means, and so fixing them for future examination. The first to make use of this method was PERLS, and it has since been adopted by POSNER, RIBBERT, and LITTEN. The method commonly employed has been the quick coagulation of the albumen by heat. This fixes it in the localities in which it existed

during life, whereas other modes of hardening, instead of doing this, have the disadvantage of extracting it. Boiling water hardens the fragment of tissue in a few minutes; its elements present no change; the chemical reactions with colouring agents are the same; and the fragment can be preserved in alcohol or chromic acid fluids, with the sole difference from uncooked preparations that instead of the spaces being empty they are seen to be filled with coagulated, clear, finely granular albuminous masses. These are so striking that POSNER asserts that no examination of a tissue infiltrated with an albuminous fluid can be regarded as exhaustive which is not controlled by this method. Applicable to various investigations, it is especially valuable in the examination of the kidneys. The slightest degree of albuminuria can, the same writer asserts, be demonstrated anatomically by this method with certainty. The transuded albuminous masses can be fixed both *in statu nascenti*, and after exudation. They are seen in characteristic aspect in the capsules around the glomeruli, and thence can be traced into the urinary tubules. When the effusion is not merely from the glomeruli, but also from the capillaries around the tubules, it can be seen between the membrana propria and the displaced epithelium. In the large white kidney, for instance, the naked-eye appearance is seen, in preparations by this method, to depend chiefly on distension of the capsules and urinary tubules with albuminous fluid.

The information which this method supplies regarding the translucent fibrinous cylinders is of especial interest. Some facts have been adduced to prove that the tube-casts arise by transformation of the epithelium of the tubules, but the results obtained by "cooking" suggest the opposite conclusion. Even in the human kidney, in which the process is complex, distinct transitions are met with between albuminous and homogeneous masses. POSNER found that, three days after ligature of the ureter, the kidney was distended and spotted with hæmorrhages, and the examination by this method shows that the condition is due to large quantities of exudation, partly serous, partly sanguinolent, partly in process of transformation, in homogeneous masses, and situated in part within the tubules.

LITTEN found that if the renal artery is ligatured, the kidney in two hours is intensely congested with serous exudation, which, after the ligature is removed, and blood allowed to flow through for twenty-four hours, comes away as tubal cylinders. Chromic preparations show abundant exudation, enclosing cells, and the early stage of the formation of tube-casts can be traced as a fine network of fibres (due to the precipitation), and visible first close to the cells. From this and other experiments, by producing venous obstruction, POSNER concludes that the formation of tube-casts may be regarded as independent of cell-destruction.

The subject has lately been reinvestigated, after the same method, by LITTEN. He finds the methods of coagulation by heat and by strong alcohol give equally satisfactory results. Having first satisfied himself that, in the animals experimented on (rabbits), the capsules around the glomeruli did not contain albuminous exudation, he tied the renal vein for two hours, and found throughout the whole cortex the capsules raised by coagulated albumen, which could be traced, in some cases, as far as the commencement of the twisted tubules. In other cases a number of red blood-corpuscles were found between glomerulus and capsule. The vessels themselves seemed to be intact, uncompressed. The epithelium of the tubules was normal, but within the tubes there was, in many places, the same material as filled the Malpighian capsule.

In another series of experiments the renal artery was tied for two hours. The structure of the kidneys was everywhere intact. Within the capsules was the same albuminous material, but in somewhat smaller quantity. Much more intense changes were found when the artery had been tied for a time, and then the blood allowed again to flow. The exudation within the capsules was much greater, so as to press the vessels away from them, and it extended into the tubules throughout their entire extent, the epithelium, however, within them being intact. The epithelium of the capsules was much swollen, and partly separated by the exudation.

It must, therefore, be regarded as certain that in mammals the albumen transudes at the Malpighian capsules—a fact which NUSSBAUM first demonstrated to be true of the frog. The question arises under what physiological or pathological conditions may the albumen transude in this situation? The transudation, LITTEN thinks, occurs under conditions which have this in common—that the renal vessels undergo a transient dilatation of their calibre. He believes that after ligature of the artery this dilatation occurs when the blood is allowed to flow. Thus he explains the occurrence of albuminuria after section of the vaso-motor nerves, and not after section of the secretory nerves of the kidney, and also its occurrence after some brain injuries. In all these varied states he can see only one common character, the dilatation of the vessels, and the consequent retardation of the blood-current through them. In acute inflammation he attributes the escape of albumen to the same mechanism; in chronic inflammation no doubt changes in the wall of the vessel concur. LITTEN, from his experiments, agrees also that the exudation of albumen is probably not confined to the glomeruli, but takes place also in the tubules.

No appointment has yet been made to the position long and worthily filled by Dr. FARR at the head of the Statistical department of the General Register Office! The most different and contradictory opinions prevail among men equally in earnest and, we are bound to assume, equally honest, as to the value of the compulsory vaccination system as a preventive against epidemics of small-pox! The Guardians of St. George's, Hanover-square, are, as usual, at their wits' end, not this time in consequence of the waywardness of their medical officers, but because it is reported that the public asylums, and even the available licensed houses, for lunatics are full, and something needs to be straightway accomplished for the relief of the rapidly-increasing (?) number of insane persons and imbeciles claiming local protection! There may not at first sight appear to be any connexion between these scraps of news, culled from the daily papers, but on closer scrutiny we believe their relation will be found both practical and significant. At least, they point to a common inference of the greatest general interest.

We have not, as a community, much less as a State, begun to recognise the "science of results," and apply it seriously to public purposes. The office which deals with vital statistics

is a subordinate section of an outlying department of the Government! No one appears to think this arrangement unseemly, or inadequate to the necessities of the case. It is, indeed, sometimes conceded that the statistics of population, with the relative birth-rates and death-rates of mortality; the apparent or conjectured causes of disease, with the sources from which they spring and the conditions which determine their virulence and extension; supply the only precise and trustworthy indications for social and State policy, but neither society nor the administrative authorities so regard them. The good ship *Hygeia* is still worked on her course by a system of dead-reckoning, and no mariner has yet arisen gifted with the acumen to strike out boldly and steer by chart and compass. In vain the heavens are studied and the laws of storms investigated; in vain the trade winds are recognised, and the needle points to the pole. We go on "coasting," carefully groping up creeks, and hugging lee shores, with the same sort of results in national health-culture and disease-extinction as the ancient mariners, of an age before the time of Columbus, were wont to gain by their seamanship. The need of the moment is a complete change in the organisation of the statistical service of the country, and an enlightened and practical estimate of its work. If, as we have more than once urged, it should yet be perceived that the opportunity offered by the present disorganised state of the department is too great to be disregarded, and wise, though tardy, measures are taken to create a well-constructed Ministry of Public Health, there will be cause to be thankful, otherwise we fear there must soon appear grave reason to regret the obtuseness which allows an opportune moment to slip.

It does not much concern us, and we cannot see that any great difference of result will accrue to the cause of public health, whether a medical man or a lay statistician is appointed to the vacant office, if the system and method of collecting and collating data and forming inferences are not wholly changed. The service of Dr. FARR has been altogether exceptional. It combined, or perhaps we ought to say included, two several functions. The qualifications indispensable to such a work are not likely to be again found in the same individual. With the retirement of Dr. FARR a special epoch closes. In future we should prefer to see the figures accumulated by the General Register Office treated solely as figures from the statistician's point of view, instead of being presented to the public, and dealt with, as medical *facts*, which they neither are nor can be unless the entire procedure by which they are collected and heaped together is rearranged. A fallacy lurks beneath the whole superstructure of the Registrar-General's Returns, so far as their bearing on "disease" and the "causes of mortality" is concerned, while as to the causes or conditions of disease these returns are in themselves worse than useless, because they are misleading. Probably the most direct way out of the difficulty would be to place one of the experienced statisticians now holding office in the General Register Office at the head of the department. It is a *statistical* office, and we fail to see why a medical man should be placed at the head of its staff. The statistical faculty is as different from the medical as that of law-interpreting from law-making, and, we must be excused for saying, generally incompatible. It is neither good policy from an administrative point of view, nor fair to the eminent statisticians engaged at Somerset House, to take the chief post from their office and give it to a member of another profession. We are persuaded that it would be better to let the Statistical Department be wholly statistical, holding it responsible for the integrity of statistical processes, and to transfer to a Health Department the duty of assessing the medical and sanitary value of the figures returned, together with the cognate duty of drawing inferences from them for the public guidance. If no better arrangement can be made, the Health Branch of the Local Government Board might be charged with the responsibility last mentioned. Dr. BUCHANAN and his coadjutors may be trusted to put an end to the evil of drawing unwarranted deductions from the information furnished by local registrars, although not even their experience and enterprise could convert the figures into facts. We have so repeatedly exposed the worthlessness of these miscalled data that it is needless to do more than urge that now, at least, they should cease to be put to a mischievous, because misleading, use. That good returns can be obtained we do not question, but not by any system which does not secure a direct and private communication of the real cause of death in every case to the central office and to a medical department. There can be no difficulty in carrying out such a method of collecting information, and it is the only one which can ever produce valuable results.

The science of results should be of prominent and practical concern to the statesman. It will occupy a central place in the political economy of the future. It is the digest of experience, the intelligent record of the *known*, from which alone the true philosopher will dare to reason. At present this science makes little or no progress, because the material with which it is provided is neither congruous nor veritable. Let those who know what the inquiry actually demands control the measures by which data are collected, and they will speedily find means to assure the accuracy and sufficiency of the returns they require. Sooner or later the country will recognise its need of a Ministry of Health. Whatever is done at the present conjuncture should point in that direction, if it is not far-sighted and out-reaching enough to compass the end in view. Whether the question be one of population, of the success of preventive measures against a particular disease, or of providing hospital accommodation for the insane, the "science of results" must supply the information required, and this science can only be studied to any practical purpose from the vantage-point of a department which shall be entrusted with the whole organisation of vital statistics in relation to the public health.

THE special correspondent of *The Times* has telegraphed from Calcutta a summary of the principal recommendations of the Indian Army Commission. Those relating to the Medical Service are thus stated:—"Medical Department to be recast. The civil medical service to be separated from the military, and the latter amalgamated with the British Army Medical Department, forming one list. Netley Hospital to be abolished." Until the details are received, it would obviously be useless to discuss the scheme for the reorganisation of the Department. We would merely remark that the authorities in India appear to have come to the conclusion we expressed last week, that there is no

good reason why the Indian and British Army Medical Departments should not be amalgamated. But there is one paragraph in the summary to which we would direct special attention. It is, "Netley Hospital to be abolished." We presume this must mean the Army Medical School at Netley, for the abolition of the hospital as the great invalid establishment for troops on foreign service would be simply impossible. If, then, it be intended to refer to the Army Medical School, we trust the authorities at home will not give their sanction to such a recommendation. The creation of this school was one of the very great boons conferred on the army by the late Lord HERBERT of Lea, and it has effected an incalculable amount of good for the soldier. Prior to its formation, the raw, newly-fledged medical officer was sent to join the service entirely ignorant of the special duties he was expected to perform, and his experience was gained often at the cost of the health or even the life of the soldier, and with much anxiety and vexation to the officer himself. Since the establishment of the Army Medical School the candidate has been trained in the special work which devolves upon him in the army, and which he cannot learn in the civil medical schools; he has been taught thoroughly the best means of preserving health in the varied circumstances under which soldiers are employed, thus saving the lives and maintaining the efficiency of the men entrusted to his care; he has likewise been specially instructed in all that relates to the treatment of tropical diseases, of gunshot wounds and injuries, and in the duties of a medical officer with troops on active service. These are all matters of the utmost importance to the army, and to abolish the only school in which they are fully and practically taught would be an act of great folly. It might as well be proposed to do away with the department of artillery studies at Woolwich, or the school of military engineering at Chatham. When the necessity for technical education is becoming daily more realised, it would certainly be a strange proceeding, and clearly a step in the wrong direction, to abolish a school where so much valuable special instruction is given—instruction having an important practical bearing on the lives and health of our soldiers in India. Economy is undoubtedly needed in the military expenditure for India, but it must not be exercised at the expense of efficiency and at the risk of the lives of our brave troops.

Annotations.

"Ne quid nimis."

THE PRESIDENCY OF THE ROYAL COLLEGE OF PHYSICIANS.

THE Royal College of Physicians will, on Monday next, proceed to elect its President for the ensuing year. Is there any reason why the usage of recent times involving re-election of the same gentleman *five* successive years should be "consolidated" to the stability of a custom? Dr. Risdon Bennett has ably and acceptably filled the office during the last four years, and probably not a Fellow of the College would desire a change, except on the ground of principle, and in view of special contingencies which may be anticipated during the year on which we are entering. It seems to be time that the London University had the honour of seating a graduate in the chair of the College. Among the names which will occur to Fellows of the College at this suggestion, that of Sir William Jenner, Bart., K.C.B., stands out conspicuously. The profession as a whole, and the Fellows, Members, and Licentiates of the College would certainly hail the election of this distinguished physician. Dr. Risdon Bennett will not, we may assume, feel the slightest hesitation in making way for such a successor. On general grounds, however, we think it is most undesirable that this chair should be occupied by any member of the profession during a long series of years. In the sister college the presidency has rarely been held for more than a single year continuously. It is the post of highest dignity open to physicians, and the number of men upon whom the profession desires to see the honour conferred is, happily, too great to allow of a monopoly. We offer these remarks in the interest of the College itself, because it is only as that august corporation is in sympathy with the great body of professional men practising under its ægis it can retain respect and influence.

DR. FARR'S TESTIMONIAL FUND.

A PRELIMINARY meeting of the General Committee, which has been formed for the purpose of raising a testimonial fund for presentation to Dr. William Farr, in acknowledgment of his valuable services to public health and the science of statistics during the past forty years, was held on Wednesday afternoon last in the library of the General Register Office, by permission of the Registrar-General. The Earl of Derby, who has consented to act as chairman of the Committee, presided at the meeting, at which an Executive Committee, not to exceed ten members, was empowered to take such measures as may appear necessary or desirable for carrying out the object in view. Mr. R. Biddulph Martin, of 68, Lombard-street, E.C., was appointed honorary treasurer of the fund, and Mr. Noel A. Humphreys, of the Registrar-General's Office, Somerset House, honorary secretary to the Committee. It was stated at the meeting that Dr. Farr's official salary during his service of rather more than forty years averaged but little over £700 per annum; it averaged but £478 during the sixteen years 1840-55, and did not amount to £1000 until 1874. It is proposed that the testimonial fund shall be devoted to supplementing the very slender provision which Dr. Farr has been enabled to make for his family, it being understood that this course would afford the greatest satisfaction and gratification to Dr. Farr. A list of the subscriptions promised will shortly be published, and in the meantime any of Dr. Farr's friends or admirers who are willing to join the General Committee, or to promote the success of the testimonial fund in any other way, are requested to communicate with the honorary secretary.

A METROPOLITAN PROVIDENT DISPENSARY SCHEME.

OUR readers will remember that in June last, at a meeting at the Cannon-street Hotel, a Provisional Committee was appointed for establishing a metropolitan association for the purpose of arranging on provident principles for the ordinary medical treatment of the industrial classes in due relation to the hospitals. Our attention has been called to a scheme prepared by the Committee then appointed, and we gladly give it that consideration to which it is entitled. When a number of gentlemen of high standing in the community give their time to the elaboration of a project for increasing the providence and independence of the working classes in the matter of medical attendance, the least we can do is to respect the object, and give a friendly consideration to any actual scheme proposed. Here, then, is a scheme covering all London, which is put forward as a practical proposition to supply all that part of the com-

munity above pauperism, and yet largely dependent on medical charities, with medical attendants of their own choice, and on independent and self-supporting terms. The defects of the present system are pointed out—somewhat roughly, we must say. The old hackneyed statement, that a million out of the four millions of London receive charitable medical assistance, is trotted out once more, though it has been pointed out again and again that this estimate is arrived at by reckoning all the patients claimed to have been relieved by each hospital as if they were all separate individuals, whereas such men as Sir Rutherford Alcock must know that many patients have letters often repeated, which make them appear as new patients, and that thousands go from hospital to hospital and count as distinct individuals in each case. In this way we get the portentous million made up very falsely. Another statement is, too, rough—viz., "About half the working men of London belong to Friendly Societies." This may be true, but to those who have had much contact with the working classes of London it will appear very doubtful.

We are told that at the meeting in question the medical profession was represented by three medical men. Two of these were consultants—one a specialist,—the third is most honourably known in connexion with the Poor-law system. It is not by such a representation that the opinions of general practitioners are to be got at. Had there been a larger representation of practitioners of actual experience in practice among the industrial classes, we scarcely think this "scheme" would have been adopted by the Committee. Briefly it is a scheme for creating fifty provident dispensaries in various parts of London, without any appeal to charitable motives or to the richer classes of the community. It is thought that the elimination of the pauper class will leave half a million of persons to be dealt with in a provident way, and that each dispensary might be so placed and built (for it is proposed to build the fifty) as to be the centre from which ten thousand of the population are to be ministered to medically. Our readers will ask how is such a scheme to be carried out on independent and voluntary principles without aid from rates, as in the case of School Board schools and free libraries on the one hand, or gifts from the charitable on the other. It is argued that the provident class of working men who compose Friendly Societies would be estranged and offended by any appeal to charity. It is further argued that the Societies in the provinces, acting jointly, have organised great medical institutions, admitting all who applied, without inquiry as to wage or income, and so have solved the problem of independent medical attendance, and that what can be done in the provinces can be done in the metropolis. Accordingly the Committee recommended that the reform of the system of medical relief in London should be based upon the action of the Friendly Societies. The funds for building the dispensaries might be raised, it is suggested, by forming a Joint Stock Company to hire or build, and to fit and let. It is believed that if the shares were issued at £1 they might be largely taken up by members of Friendly Societies and others, who would be subscribers also to the dispensaries themselves, and the Committee have no doubt that the friends of this movement of all classes would contribute. The rule of the Derby Medical Association is quoted with approval, that prior to admission no questions are to be asked as to the earnings of the husband or the family, the Committee being of opinion that as there is no charitable element in the matter, they have no right to do so. The dispensaries thus provided are to be in organic relation with the London hospitals, and a system of consultation between the dispensary and hospital staffs, in regard to bad cases, is formulated in a very felicitous if somewhat theoretical way.

We are not impressed with the practical aspect of this scheme. It has too much of a *doctrinaire* character in many of its parts, and has the look more of the handiwork of a joint-stock company maker than of a medical practitioner. It is also far too pretentious. The metropolis cannot be dealt with like a provincial town. It would have been far wiser to have attempted to create a few sound provident dispensaries on the lines of those already in existence, trusting to the force of good example. Again, it seems to us very objectionable indeed that anybody is to be admitted to cheap medical attendance without inquiry as to his fitness to pay proper medical charges. If this part of the scheme were carried out, the medical profession would be greatly injured instead of being benefited. But the weightiest objection we see to this scheme is that it, to use a proverbial phrase, "takes coals to Newcastle." It caters for the Friendly Societies, who already know how to manage their own affairs, and constitute the provident section of the working classes, and, more disappointing still, it would band all the industrial classes together, after the example of the medical institutions of some of the provincial towns. All we hear of these societies is to the effect that one medical man, generally a young man and a stranger, attends a large number of people for a very inadequate sum, to the dislocation of the old relations between families and their doctors. The scheme does not propose such an arrangement, but it is not to be expected that its promoters will have any power of permanently controlling the movement.

"DOUBLE-STAINING" IN MICROSCOPICAL INVESTIGATION.

THE employment of staining agents in the preparation of animal tissues for microscopical examination has been one of the most useful advances in this branch of science. Histologists were not long in finding out what might well have been predicted, that different tissues with varying chemical reactions are differently acted upon by various staining fluids, and this fact has for some time been used to assist microscopists in the differentiation of tissues. The number of staining agents has of late years become considerably increased, and a good deal of attention has been expended upon perfecting their use. At the last meeting of the Royal Microscopical Society, Dr. Heneage Gibbes explained the processes by which he is able to stain a single section in more than one colour, getting each tissue in the section stained a different tint. Double staining has been accomplished before, but Dr. Gibbes is able to get treble and even quadruple staining. Thus among other specimens he showed transverse sections of the rat's-tail, in which the bone, cartilage, nerves, tendon cells, muscle, and blood-vessels, which had different chemical reactions, were each stained a distinctly different colour; a section of a dog's tongue showed the muscle stained pink, the mucous glands purple, and the serous glands supplying the taste organ green; and a section of scalp showed the stem of the hair yellow, the root and follicle bright carmine, and the muscular tissue violet, with the nuclei green. These results have only been obtained after long experimenting. For double staining successive immersion in solutions of picro-carmine and logwood may be used; or, better, immersion first in a spirituous solution of roseine or aniline violet, and then in an aqueous solution of aniline blue or iodine green. To stain with more than two colours is much more difficult; the best results are obtained by first staining in chloride of gold or picro-carmine, and then in the spirituous and aqueous solutions of anilines. The value of these results will be apparent to all engaged in elaborate histological investigation. At the same meeting of the Royal Microscopical Society Dr. Gibbes demonstrated that perfect stereoscopic effect can be obtained under the ordinary binocular micro-

scope with $\frac{1}{12}$ oil immersion objective without special stand or apparatus; both fields were fully illuminated, and in a section of a tadpole's tail the nerves, capillaries, lymphatics, and branched corpuscles could be seen lying each in their individual planes.

EXISTING SMALL-POX IN THE METROPOLIS.

A QUESTION put by Dr. Playfair to the President of the Local Government Board, in the House of Commons, on the 15th instant, as to increasing small-pox in the metropolis, and the relation of this increase to the arrangements for public vaccination, elicited on the whole a satisfactory reply. The increase to which Dr. Playfair referred is, we are assured, at an end; it was not very serious, and was confined to four or five parishes. The vaccination arrangements work well, although "the metropolis is not so efficiently vaccinated as the rest of the kingdom, in consequence of the fluctuating character of much of its population;" and, to crown all, there are recent reports of the Local Government Board, and the report of Dr. Bridges (both, by the way, relating to periods previous to the pre ent year) to consult on the subject of small-pox and vaccination. It is to be inferred from this, doubtless, that the Local Government Board has not been inattentive to the recent increase of small-pox, and that it may have taken some action with regard to it; but it should have been obvious that Dr. Playfair's question was intended to elicit information as to the extent to which that Board had given attention to the outbreak, and to the sufficiency of the public vaccination arrangements to meet it. Rightly or wrongly, the Board was blamed for lack of energy in stimulating apathetic vaccination authorities to action during the period of increment of the last epidemic; and the profession at least would certainly have been gratified to know that an increase of small-pox, such as that which has just happened in London, had given rise to energetic action on the part of the Local Government Board with a view of rousing the local authorities to earnest efforts for arresting the extension at the beginning. The President of the Local Government Board contents himself with being oracular, and he must not be surprised if the presumed light of his vaccination department being thus hid, as it were, under a bushel, ordinary eyes will not distinguish it there, and may be prepared to be led astray by the first unshaded heterodox light at hand—say, animal vaccination.

INTERNATIONAL CONGRESS OF HYGIENE.

PROFESSOR GIACINTI PACCHIOTTI of Turin, whose recent elevation to the Italian Senate reinforces an assembly already rich in medical talent, sends us a circular announcing the third meeting of the International Public Health Congress, to be held at Turin from Monday the 6th to Sunday the 12th Sept., 1880. The Italian Government has proffered its active co-operation in the meeting, and the President of the Provincial Council of Turin has set apart the sum of 2500fr. (£100) as a prize to the author of the best treatise on "The Application of Hygiene to Rural Populations." The prize will be awarded at the fourth International Congress. Already France, Belgium, Portugal, and Roumania have intimated their intention of being represented at Turin on 6th Sept., and Professor Pacchiotti, who attended the meeting of the British Medical Association at Cork, reminds us of the assurances he received from its members of their sympathy with the international hygienic movement, and of their wish to advance it in every way; while he has also obtained from Professor Donders of Utrecht, and other promoters of last year's congress at Amsterdam, the promise of influential support at the Turinese réunion. Dr. Jäger of Amsterdam, indeed, has proposed to utilise the occasion for starting an International Society of Pure Water Supply. The array of subjects already announced for discussion at the Congress is a formidable one, and among the English and American contributions we may note that of Mr. H. A. Allbutt of Leeds on "Pellagra, and the best means of preventing it," and that of Dr. E. Seguin of New York, on the "Metric System in Medicine," and on "International Medical Uniformity." Professor Pacchiotti holds out an additional attraction to the members of the approaching congress, to wit, an excursion on Sunday the 12th September to Milan, where an experiment in cremation may be witnessed in the "Crematorio monumentale," the first and best appointed of these establishments; while lovers of the fine arts will have an opportunity of gratifying their tastes at the "Esposizione delle Bella Arti," to be held at the same time in the picturesque subalpine city. Not a few of our readers must already in England and abroad have met Professor Pacchiotti as original or corresponding member of congresses devoted to the healing art, and in his courtesy and kindness as well as in his high professional gifts, they will find a still further inducement to attend the International Congress under his presidency at Turin.

POST-MORTEM CONTRACTION OF THE PULMONARY MUSCLES.

DR. A. HENOCQUE communicated at a recent meeting of the Société de Biologie some interesting observations upon this subject. He had been led to investigate it by observing, in the course of some experiments made with Dr. Brown-Séquard, some curious changes in the aspect of the lungs after death. To ascertain their cause, a series of experiments on animals were undertaken. When the lungs are removed in an uninjured state, three kinds of appearances of the pulmonary vesicles may be noticed—collapse or obliteration, moderate expansion, or an excessive degree of expansion which may be regarded as emphysema. If certain parts of the lung which can be carefully examined are watched, their aspect may be seen to change in the course of a few minutes. A part which at first presents only a moderate degree of expansion of the vesicles may presently exhibit an extreme degree of emphysema, even with rupture of vesicles. Slighter changes may occur in the volume and aspect of the pulmonary lobes, and may alternate with, and succeed, one another during five or ten minutes. Certain conditions favour or hinder the state of expansion of the vesicles. In a guinea-pig killed by carbonic acid gas the expansion was much more marked than in other animals of the same species asphyxiated by tying the trachea or killed by decapitation. The action of cold water notably increases the production of these phenomena, and they are also distinct in cats killed by curara. A series of observations were made upon dogs, cats, guinea-pigs, sheep, calves, and oxen, and led to the following conclusions—1. The condition of expansion, of dilatation, or collapse, the relative volume of the pulmonary vesicles, of the different pulmonary lobes, or of certain groups of lobules, may become modified after death. 2. These changes may be transient, may cease, and then manifest themselves in different parts of the lungs in variable extent; they may be produced slowly, and leave the lung in a state of definite expansion, which causes, after desiccation, very different appearances as to degree, extent, and seat of the expansion of the vesicles, of their dilatation or obliteration. 3. These modifications are due to the contractions of the smooth muscular fibres contained in the bronchial tubes and in the parenchyma of the lung. They correspond in the lungs to the changes in volume and aspect produced by the vermicular contractions which occur during the act of death in the intestines, bladder, gravid uterus, and ureters. 4. This interpretation is based on the conditions in which the variations are produced. When all the retraction due to the elasticity of the lung is over, they

occur slowly and progressively, with alternations of arrest, and they are increased by stimuli, such as cold and carbonic acid, compression and light friction, and, finally, seem to be evolved in a manner quite similar to that of the contractions observed in other organs which possess unstriated muscular fibres. Brown-Séquard has shown that the contractions of unstriated muscular fibres may be increased by the action of carbonic acid. M. Paul Bert asked why the air in these circumstances should be driven into the vesicles—a question very difficult to answer.

WESTMINSTER HOSPITAL.

A DINNER in aid of the funds of the Westminster Hospital was held on Saturday last at Willis's Rooms, H.R.H. the Prince of Wales presiding. In proposing the toast of the evening—"Prosperity to the Westminster Hospital,"—the Prince stated that the special object of his appeal to the charitable was to clear off the debt incurred in the recent improvements of the hospital, it was also necessary to improve the accommodation of the resident medical officers and nurses, the out-patient department, and medical school buildings. Better accommodation is urgently needed, and we hope the Committee will actively take the matter up. Some months ago we called attention to several defects in the out-patient department; several of these have been corrected, but others remain and appear inseparable from the present arrangement of the rooms in the basement. We hope that a movement may be set on foot to secure the much-needed addition of a suitable building close by for the out-patients and medical school. The subscriptions announced at the dinner amounted to over £2500, including £1000 from the medical school, especially given towards the purchase of a site for the new buildings. This sum is a good nucleus, and it ought to encourage the Committee to undertake the task.

THE POPULATION OF FRANCE.

THE returns of births, marriages, and deaths in France during the year 1878 have just been published, and they show that the rate of increase in the population, as regards the excess of births over deaths, is less than it had been for many years. The births amounted to 937,211, consisting of 444,316 legitimate, and 35,032 illegitimate male children, and of 424,983 legitimate, and 32,880 illegitimate female children; and the deaths to 839,036 (432,867 males, and 406,169 females), so that the excess of births over deaths was 98,175, as compared with 172,936 in 1872, 101,776 in 1873, 172,943 in 1874, 105,913 in 1875, 132,608 in 1876, and 142,662 in 1877. At the present rate of increase, the population of France would not double itself in less than four hundred years; though in estimating the rate of increase in France it must be borne mind that there is another element besides the excess of births over deaths—viz., the immigration, which is always in excess of the emigration. The principal cause of the slow rate of increase is the decline in the number of marriages, which have fallen from 352,733 in 1872, to 279,802 in 1878. In the year 1877 there were only 17 departments in which the number of deaths was in excess of the births; while in 1878 there were 26, including the Seine-et-Oise, the Oise, the Seine-et-Marne, and the Calvados in the north; the Rhône, the Côte d'Or, and the Eure-et-Loire in the centre; and the Vaucluse, the Var, the Bouches-du-Rhône, and the Hérault in the south. The influence exercised by the altered modes of cultivating the land is apparent in these results. Thus, for instance, in Normandy the development which has been given to stock-breeding has diminished the demand for manual labour; while in the south the decrease of population is most marked in the districts which have had their vines destroyed by the phylloxera vastatrix. The department of the Seine—in other words, Paris—shows an excess of 6332 births over deaths, and 21,715 marriages were celebrated during the year.

DIARRHŒA AND SIMPLE CHOLERA.

FOR the first time since the beginning of the year the causes of death in London last week included deaths which were referred to simple cholera. The Registrar-General reports that the deaths of two women in the Westminster Workhouse, aged respectively seventy and sixty-four years, were last week certified by the medical officer of that institution to have resulted from English cholera and choleraic diarrhœa. It appears probable, judging from the irregular proportions which the deaths referred to simple cholera bear to those which result from diarrhœa in our large towns during the summer season, that considerable difference of opinion exists as to the definition of fatal cases of simple cholera. It would be interesting to know what constituted the difference between the symptoms of the two cases above referred to, and the ordinary cases of senile diarrhœa which are far from rare in our large workhouses. In order that the statistics of the causes of death in England and Wales, which are published by the Registrar-General at a considerable cost of public time and money, may acquire increased value, greater uniformity in the system of nosological nomenclature adopted by certifying medical practitioners is essentially necessary.

BERI-BERI IN CALCUTTA.

NEWS from Calcutta of the 14th inst. states the probable appearance of beri-beri in that city. The disease, although familiar enough in Madras and Ceylon, does not appear to have been observed in Calcutta before. The symptoms as described are—swelling of the limbs, fever, occasionally disturbance of the bowels, often burning and pain in the affected limbs, shortness of breathing, and great emaciation in fatal cases. Death is generally sudden. Showing itself first in the southern parts of the city, the disease has gradually spread to the northern. Hitherto Europeans have escaped the malady, the natives, Circassians, and Armenians having alone suffered, and this notwithstanding that the disease chiefly prevails in the European quarter. Whole families have been seized, and its "localisation" is said to be pronounced. The malady is reported to be dying out, but its reappearance in the rainy season is anticipated.

QUARANTINE CONFERENCE.

THE United States National Board of Health has requested all quarantine authorities in the States to send authorised representatives to meet and confer with it in Washington on the 5th May next. The Conference is for the purpose of amending the rules and regulations prepared by the Board last year, and recommended by it to State and local authorities for adoption. The rules and regulations in question were prepared to meet an emergency, and the time has now come when it is thought desirable to revise them, and to endeavour to place both maritime and, so to speak, inland quarantine in the States upon a uniform footing, or at least to secure that they shall be managed upon uniform principles.

GLANDERS AND FARCY.

THE recent report that no less than 116 horses had been slaughtered on account of glanders and farcy in the parish of Kensington during the past six months was somewhat startling. Lord G. Hamilton's statement on the subject in the House of Commons, on the 16th inst., does not mend the matter. He admits the slaughtering of 115 horses, but he

explains this not by any recent increase in the prevalence of glanders and farcy, but by the greater activity of the Local Sanitary Authority in ferreting out cases and bringing them to light. If this be the case there must be a much greater amount of glanders present in metropolitan stables than is generally believed, and the subject deserves the careful consideration of other sanitary authorities with a view to pursuing the same course as has been pursued in Kensington.

RECENT ELECTION INTELLIGENCE.

WE regret to hear that Dr. Lush, the respected member for Salisbury, whose name has been closely identified with Medical Reform during many years past, will not seek re-election. The honourable member has long felt the strain of Parliamentary duty a severe tax on his strength, and we are sorry to find that he is not now in a state of health to render a continuance of this strain desirable. The respect of the profession will follow the resigning member into his retirement. It is not, we believe, yet finally settled whether Dr. Richardson will stand for West Kent. Dr. J. A. Campbell is stated to be a candidate for the representation of the Universities of Glasgow and Aberdeen. Dr. Farquharson is not, it seems, likely to be opposed in West Aberdeenshire. We may take this opportunity of adding to the list given last week of members of our profession seeking re-election, the name of Sir J. Trevor Lawrence, Bart., the representative for Mid Surrey.

WE are informed that the statements with regard to the prevalence of measles on board the training ships at Devonport have been exaggerated. The disease has been prevailing for some time past in contiguous towns, and as the boys have been allowed to visit their friends, many of whom reside in infected districts, it is not surprising that measles has shown itself in the ships. Since the early part of February twenty cases have thus occurred. Isolation and other sanitary precautions have, however, checked the spread of the disease, and to the date of our information (March 9th) no case had occurred for nine days.

AN inquest was held in Dublin last Monday on the body of a man who was suffocated by the fumes of chlorine gas whilst his room was being disinfected. It seems that the sanitary authority had ordered the apartment to be disinfected, and when it was completed the deceased was warned not to enter it for at least six hours; but disregarding this warning, he ran into the room, and, breathing the poisonous atmosphere, succumbed from its effects. The deceased was about fifty years of age, and was of weak intellect.

SURGEON-MAJOR FREDERICK B. SCOTT, M.D., has obtained permission from the authorities to accompany the ex-Empress of the French on her melancholy visit to Zululand. Dr. Scott was for a few months attached to Lord Chelmsford's Staff during the Zulu campaign, was present with the Head-quarter Camp at the time the Prince Imperial was killed, and he accompanied the party of officers, 17th Lancers, and Mounted Infantry, who started in search of the body on the morning after the event occurred.

THE vital statistics of the Madras Presidency recently issued, and covering the period affected by the late famine, show a remarkable falling off in the number of births within the districts most severely visited. In fourteen districts the ratio of births per 1000 of the population fell from 20 to 8·8. That this has immediately resulted from the famine is rendered nearly certain by the fact that in seven other districts which almost wholly escaped its ravages the birth-rate has only fallen from 19·9 to 17·2.

TO meet the increasing demand upon the accommodation of the Glasgow Ophthalmic Institution, the Earl of Stair, Lord Blantyre, James A. Campbell, LL.D., and seven other gentlemen, have offered £200 each towards the erection of a new house. The contemplated site is in a convenient position, and the scheme is already enlisting influential lay and professional support.

VERY severe weather has been experienced in Cabul during the month of February; on the 6th of that month snow fell in large quantities, detaining the convoys of sick, wounded, and worn-out men who were under orders to return to India. The thermometer at night registers 20° of frost. Deputy Surgeon-General Hassard arrived at Sherpur on Feb. 2nd, and assumed charge of the division.

A REPORT, which appears to want confirmation, has been circulated to the effect that a large number of the workmen employed in the boring of the St. Gothard tunnel are suffering from a disease exhibiting symptoms similar to those characterising trichinosis. Three of the workmen have been admitted into a Turin hospital.

THE following medical officers have been detailed for service with the Bombay troops ordered to Southern Afghanistan:—Surgeon-Majors B. Burland, M.D.; J. F. Beattie, M.D.; T. O. Farrell, M.D.; W. R. G. Hinds, M.D.; J. Riddick; H. Waghorn; Surgeons E. H. Roe and M. D. O'Connell.

THE financial statement read at the annual meeting of the Hastings Provident Dispensary last week was highly satisfactory. The institution was stated to be working with complete success, and £756 odd was paid to the medical officers during the past year.

ON the 1st of April an election will take place for an Examiner in the Royal College of Surgeons in Ireland, in the vacancy caused by the decease of Mr. O'Leary, M.P. None but Fellows of the College are eligible as candidates.

SURGEON-GENERAL DAVID REID MACKINNON has been appointed to succeed Surgeon-General Hampden Hugh Massy, C.B., as Principal Medical Officer of the Royal Victoria Hospital, Netley.

SURG.-MAJOR A. M. TIPPETTS has been appointed Principal Medical Officer of the Reserve Division, Afghan Field Force at Peshawur, with the officiating rank of Deputy Surgeon-General.

AN outbreak of simple continued fever has arisen in Hare Island, adjacent to Cork. About forty persons have been attacked, and one death has resulted.

Analytical Records.

WHYSALL'S LEMON GINGERETTE.

(W. WHYSALL, GRANTHAM.)

IT is always a great difficulty with the advocates of temperance to find a sufficient variety of non-alcoholic beverages to suit different tastes and requirements. Tea and coffee, though excellent in their places, do not agree with everyone, and should never be drunk except in strict moderation. Effervescing drinks, again, invaluable in the summer and to some persons, afford but little variety. The preparation now before us has therefore a strong claim upon our attention, and we are glad to be able to speak of it in terms of warm approval. It is extremely pleasant in flavour, is not at all sickly, and is not too highly flavoured either with

ginger or lemon. It makes, in fact, a capital drink, either with soda-water or with hot or cold water; and it is remarkable that several of our friends who have tried it have refused to believe it was not alcoholic; such, however, is really the case.

AMERICAN BREAKFAST CEREALS.

(THE CEREALS MANUFACTURING COMPANY, NEW YORK; WHITE, SON, & STRATTEN, HULL.)

Wheat, oats, barley, and maize, carefully decorticated, crushed, partially cooked by steam, and dried. They are beautifully pure, and can be cooked in a few minutes, yielding very wholesome and nutritious food. Of course they can be cooked in a variety of ways, and in all possess to some extent the advantages of whole-meal bread. The finer meals are made into "cereal cream" for dyspeptics, children, &c., and "cereal milk" for infants of all ages. We can cordially recommend these preparations.

STRUVE'S MINERAL WATERS.

(PREPARED AT THE ROYAL GERMAN SPA, BRIGHTON.)

We have received samples of several of these excellent chemical imitations—or perhaps we ought rather to say copies—of well-known mineral waters. Thus we have the Hunyadi János, the Vichy Grande Grille, and the Super-carbonated Seltzer Waters, reproduced carefully from analyses; and also a Pyrophosphate of Iron Water. It is still a moot point whether such artificial waters can rival the original; but, at any rate, they have the advantage of lower price and certain and invariable composition.

SWEDISH IRON-WATER, FROM KARLSTAD.

(A. L. SCHELIN, MALVERN-ROAD, DALSTON.)

This mineral water is remarkable on account of the large quantity of iron in proportion to other elements which it contains. The iron seems mainly present as ferrous carbonate, precipitated on boiling. It is a powerful tonic, and will no doubt be useful in chlorotic affections, as it possesses many of the virtues of dialysed iron.

PEPTONE.

(PREPARED BY AND UNDER THE SUPERINTENDENCE OF MR. S. DARBY, FOR SAVORY & MOORE, 143, NEW BOND-STREET.)

Mr. Darby has for years past made the preparation of peptones an object of scientific study. It is a matter of no little difficulty to obtain a peptone—that is, an artificially digested albuminoid—which shall not be too bitter for use. The sample now submitted to us is a remarkable success, and shows what may be accomplished by skilful manufacture. It may be used in weak beef-tea, or in arrowroot or cream.

MEAD'S ADHESIVE PLASTER.

(MANUFACTURED BY SEABURY & JOHNSON.)

We have tried this plaster, and have been very pleased with the results. It adheres readily without heat or moisture, is unirritating, supple, does not crack, and retains its hold on the skin for several days. It is in many ways a great improvement upon the adhesive plasters in general use. It is said to be antiseptic, from the presence of salicylic acid.

IVORY JELLY.

(JOHN MOIR & SON, ABERDEEN AND SEVILLE.)

A firm, good jelly, highly flavoured, and as good as the best that can be made at home. It will be found a treasure in the sick-room.

LUMINOUS PAINT.

ON Thursday, the 11th inst., at the Society of Arts, Professor Roscoe in the chair, Mr. Heaton of Charing-cross Hospital gave an account of the luminous paint, for which the late Mr. Balmain obtained a patent, and which is now being introduced for many useful purposes. Surfaces painted with this substance, which looks like ordinary white paint, absorb light with remarkable avidity, and continue afterwards to emit it in the dark for some hours. The paint, in fact, stores up daylight, or even candlelight, and gives it out again afterwards in quantity sufficient to render it available in certain cases as a substitute for artificial illumination.

The property to which the paint owes its power is called phosphorescence, or more accurately, phosphorescence by insolation, since the broader term is often applied to the light emitted by living animals, by decaying animal and vegetable matter, and under several other conditions. It was first observed in 1602, when a shoemaker of Bologna, in trying to prepare gold from heavy spar, obtained accidentally the sulphide of barium, which possesses the property in a marked degree. Many other phosphoric, or light-carrying bodies, natural and artificial, were subsequently discovered, and particularly the celebrated phosphorus, or pyrophorus of Canton, which was prepared by igniting oyster-shells with sulphur, and was described to the Royal Society in 1761. A specimen prepared by Canton himself was shown at the lecture. It bears the date 1764 engraved on the glass, and was until lately in the possession of Mr. Canton of Charing-cross Hospital, a lineal descendant of the discoverer. The specimen still retains its power, although it has remained for 126 years in a hermetically-sealed tube. It consists, of course, essentially of sulphide of calcium, and it is remarkable that this compound prepared in other ways is still the most powerful phosphorescent body known.

Most of our scientific knowledge in regard to phosphorescence is due to the younger Becquerel, whose researches on the subject extend over more than thirty years. The property is a very common one, although most substances emit light only for very short periods of time. It is possessed to a certain extent even by white paper, and by diamonds and rubies with great intensity, though little persistence. Almost all shades of colour can be obtained from different preparations, but the rose-violet of Balmain's paint is superior, in brilliancy and duration combined, to all others.

The paint can be mixed either with water or oil. In the latter vehicle it resists the action of water and air in a remarkable manner, and can be applied to an almost indefinite number of purposes. Many of these applications were illustrated at the lecture, the luminous sources being the electric light, the electric spark, the magnesium light, ordinary candle and gas light, and above all, common diffused daylight. Among the ornamental articles exhibited were clocks, india-rubber balls, decorative tiles and statuary, the last being represented by a brilliantly luminous bust of the Prince Consort. In the more practical class were luminous panes adapted for use in gunpowder and spirit stores, lucifer match boxes easily visible throughout the night, advertisements of lodgings, inscriptions for post-offices, and the like. The roofs of railway carriages have already been painted with the new material, and the light is said to be quite sufficient for tunnels, although, of course, it is not proposed that it shall replace lamps at night. The names of streets may also be advantageously inscribed in luminous paint, and endless other uses suggest themselves.

Most important of all, however, are the proposed uses of the new paint for marine purposes. For example, it is often extremely difficult, and yet absolutely necessary, on dark nights, to distinguish the buoys which mark the channels of harbours and rivers. If the buoys were coated with the luminous paint they would be visible throughout the whole, or, at any rate, the greater part of the night. Again, a life-buoy is practically useless on a dark night. The unfortunate man overboard cannot see it, and however good a swimmer he may be, it is a mere chance if he reaches it, or if a boat is able to pick him up. But the life-buoy exhibited at the lecture would be at all times sufficiently luminous to be visible at short distances, and would guide not only the swimmer but the boat's crew. Lastly, a diver in full dress was exhibited, whose helmet and waterproof coat had been painted and illuminated. He looked like a ponderous and unwieldy ghost, and emitted an amount of light that would be quite sufficient to guide his operations at the bottom of the water. It was in fact stated that the same dress had been worn a day or two before at the bottom of the Southampton Dock, and that the diver had been able to

distinguish the bolt heads on a ship's bottom with perfect ease.

Messrs. Ihlee and Horne of Aldermanbury, the agents for the patent, likewise showed a luminous inscription forty feet long in illustration of the value of the invention, as a means of advertising.

The lecture was largely attended, the presidents of several of the learned Societies being among the audience.

HEALTH OF LARGE ENGLISH TOWNS.

TENTH WEEK OF 1880.

ENGLISH urban mortality shows further decline from the high rates that prevailed a month since. In twenty of the largest towns, estimated to contain in the middle of this year seven and a half millions of persons, or nearly one-third of the entire population of England and Wales, 5680 births and 3070 deaths were registered last week. The births exceeded by 495, whereas the deaths were 205 below, the average weekly numbers during 1879. The deaths showed a further decline of 111 from the decreasing numbers in recent weeks. The annual death-rate in the twenty towns, which had steadily declined from 37·0 to 22·1 in the five preceding weeks, further fell to 21·4 last week. During the past ten weeks the death-rate in these towns averaged 26·4 per 1000 against 23·0, 25·5, and 27·2 in the corresponding periods of 1877, 1878, and 1879. The lowest death-rates in the twenty towns last week were 15·6 in Portsmouth, 17·5 in Brighton, 19·0 in Sheffield, and 19·2 in Wolverhampton. The rates in the other towns ranged upwards to 24·5 in Leicester, 24·6 in Sunderland, 24·9 in Norwich, 25·9 in Manchester, and the highest rate, 31·3, was again recorded in Plymouth. This continued excess in Plymouth was again mainly due to the exceptional fatality of measles.

The deaths referred to the seven principal zymotic diseases in the twenty towns, which were 638 in the first week of February, have since steadily declined, and were last week 457; these included 173 from whooping-cough, 99 from scarlet fever, 80 from measles, and 40 from fever, mainly enteric. The annual death-rate from these diseases averaged 3·2 per 1000 in the twenty towns, and ranged from 1·5 in Brighton to 5·9 and 9·0 in Hull and Plymouth. Whooping-cough showed the largest proportional fatality in Salford, Norwich, London, and Manchester; scarlet fever in Sunderland and Bradford; and measles in Plymouth, Hull, and Nottingham. Nine more deaths were referred to enteric fever in Sheffield. The 17 deaths from diphtheria in the twenty towns included 13 in London. Small-pox caused 13 more deaths in London, but not one in any of the nineteen large provincial towns. The number of small-pox patients in the Metropolitan Asylum Hospitals, which had steadily increased from 80 to 185 in the five preceding weeks, declined to 172 on Saturday last; 39 new cases of small-pox were admitted to these hospitals during last week, against 48 and 49 in the two previous weeks. The Highgate Small-pox Hospital contained 16 patients on Saturday last, 2 of whom were, however, not suffering from small-pox.

The fatality of lung-diseases continues to decline, notwithstanding the prevalence of cold north-easterly winds. The deaths referred to diseases of the respiratory organs in London, which had declined from 1557 to 390 in the five preceding weeks, further fell to 315 last week, and were no less than 147 below the corrected weekly average; 191 resulted from bronchitis, and 83 from pneumonia. The annual death-rate from diseases of this class in London last week was equal to 5·0 per 1000, against 4·8 from the same diseases in Liverpool.

ABERDEEN ROYAL INFIRMARY.—The accounts of the Infirmary for 1879 show that the income amounted to £6082 18*s.* 3*d.*, and the expenditure to £6270 8*s.* 6*d.*, leaving a deficiency of £187 10*s.* 3*d.* In the previous year the balance sheet presented a surplus of £635, the income being £7075, and the expenditure £6440. The accounts of the Convalescent Hospital show that the income last year was £338 18*s.* 3*d.* and was exceeded by the expenditure to the extent of £88 2*s.* 9*d.*, a considerable decrease having taken place in the amount of donations.

Correspondence.

"Audi alteram partem."

ALGIERS AS A HEALTH RESORT.

To the Editor of THE LANCET.

SIR,—I need not say one word on the beauty of the climate of Algiers, or of its fitness for the curative treatment of disease—Algiers is already accepted by the profession in England as one of our most valued health resorts. With a climate hardly inferior to Cairo, it is within thirty-six hours' sail of Marseilles, and—which is another practical recommendation—it is in the hands of our allies the French, whose firm rule makes life here as safe, pleasant, and luxurious as in Paris. In a few months there will be a daily large steamer which will make the journey in about thirty hours from Marseilles. When I crossed a month ago it was like a trip on the lake of Geneva. Algiers lies at four days easy journey from our own shores.

It is of the accommodation which the invalid will find at Algiers that I feel it my duty to say a word of warning. For the rich patient who can afford to hire one of the villas at Mustapha, a suburb of Algiers, a very perfect winter home is offered. The sight is lovely, looking over the bay of Algiers and the distant, snow-capped hills. It must, however, be said of this enchanting spot that the drainage of these villas is not good, that French imitations of our water-closets are not a success, that sewer-traps are unknown, and that certainly there have been cases of typhoid there this winter. A model villa, perfect in every sanitary appliance, and placed on the heights at Mustapha, is the home of our Consul-General, and is known to all English visitors by his pleasant Tuesday afternoon garden parties. Colonel Playfair has introduced earth closets, and thus cut himself off from the defective drainage system of Mustapha. I cannot doubt that his example will extend to the other villas. I would also say that there is at Mustapha a charming English boarding-house for invalids—the villa Roussel of Mrs. Jennings—unfortunately so full that I could not gain admission.

This winter every villa and lodging in Mustapha is crowded, and the stranger seeking health in this climate is driven to the hotels in Algiers. I can fancy the dull sense of horror which must come over any English party with a sick brother or sister, who, familiar with the hotels of the Riviera, have by medical advice changed their winter resort to Algiers. I say at once they had better have stayed at home—many times better have gone to Ventnor or Torquay. The French quarter of Algiers is on the shore at the foot of the hill, on which lies the crowded Arab town. It consists of two or three streets of the usual French type, with covered arcades and high houses built round court-yards. I believe they pulled down many interesting Moorish houses, including the Palace of the Dey, to make room for these streets; yet on the opposite shore of the bay they had a site for a new Algiers which might one day have rivalled Carthage in the beauty of its surroundings, as it would have resembled it in position. Rooms were taken for me by a friend in one of the principal hotels on the boulevard facing the sea, and I thus had the good fortune to get a front room high up, out of the reach of the sewer gases that pervade the atmosphere of every street in Algiers, and even make the walk on the splendid terrace facing the sea intolerable. The court-yard of my hotel was glazed over, and the staircase and some of the bedrooms going into this court had thus no direct communication with the open air, and this in a hot climate, with the thermometer above 60° in midwinter. The water-closets all opened into one shaft, which was lighted from the roof, and was also glazed. There was no proper trap to these closets, and they and the corridors of the hotel on which they open are therefore in direct communication with the main sewers of the town. The service of the hotel was good, though the food and cooking were most indifferent. The whole hotel was thus about the type of one in a French or Italian provincial town. The crowded boulevard on which these hotels are situated is very noisy; a tram runs along late and early; the morning gun fires at

six and shakes the house, and after that there is no rest. Fancy the misery of such surroundings to a delicate patient accustomed to the quiet luxury and order of the Riviera or Torquay hotels! It is proposed to build a large hotel at Mustapha, and I am sure, Sir, you will concur with me that until this hotel be opened patients, who cannot afford to live in a villa at Mustapha, had better not risk further illness in the hotels of Algiers, but remain on the other side of the Mediterranean. I stayed a week in Algiers, and had the fortune to escape all the ills which follow sewer-gas contamination of houses. Others I have seen have not been so lucky.

I came on by rail some fifty miles to this splendid health resort, the Hammam R'Irha, some 2000 feet above the sea, and on a site which for beauty or extent is excelled by few in Europe. It reminds one of the higher Italian Alps. There is a French village close by, and a few of the fields are being got under cultivation. M. Arlès-Dufour is the owner of the hotel and the adjoining land, and he is now planting vineyards on the site of the old Roman city of Aquæ Calidæ, the foundations of which lie all around. The hotel is very comfortable, and the table good. I have enjoyed ten days quiet and unbroken sunshine, with a shade temperature of 60° at these heights, and only the first days of March. The hot-water springs, which rise at 114°, are mildly saline, and are used as baths. There is, moreover, a pleasant, cold, alkaline spring, with a trace of iron, and slightly gaseous, which is the usual table water. I can hardly fancy a more charming retreat from the heat and sewer poison of Algiers, and I think our London physicians will be glad to remember this spot when giving instructions regarding a winter in Algiers.

I am, Sir, your obedient servant,
C. LOCKHART ROBERTSON.

Hammam R'Irha, March 9th, 1880.

AN EXAMPLE SHOWING THE ADVANTAGES OF ANTISEPTIC SURGERY.

To the Editor of THE LANCET.

SIR,—In an address on the "Advancement of Surgery," delivered by Dr. Roderick Maclaren to the Border Counties Branch of the British Medical Association, published in recent numbers of THE LANCET, Dr. Maclaren gives, as an example of the advantage of antiseptic treatment of wounds, a case of compound fracture of the patella, involving the knee-joint. As this case will show the good results which can be obtained by strictly following Mr. Lister's plan of treatment, I venture to add a few further details of the case.

The patient, a muscular labouring man, gave the following history of the accident:—Whilst engaged with several workmen in managing a powerful crane, from some cause it broke down, killing one man on the spot and driving a piece of jagged iron into the knee of the patient. The wound was simply bandaged up at the time, after the iron was withdrawn, and the patient was sent home, and it was not until the following day that he was sent to the Cumberland Infirmary, where he was admitted *thirty-two hours after receipt of injury*. The following was his condition:—Temperature 102°, pulse rapid and hard, skin hot and dry, tongue dry and furred, great thirst—in short, in a state of fever—with intense pain in the left knee. The injury had never been looked to since the accident, owing to his removal to his own home, away from the surgeon who first saw the case. The bandage was very dirty, and had a foul smell; on removing this I found a lacerated wound about two inches long immediately over the joint, which was much swollen; the edges of this wound were irritable and inflamed; on introducing my finger it passed through a transversely fractured patella, the fragments of which were widely separated, quite into the knee-joint; on withdrawing the finger a foul-smelling sanious discharge followed.

The case was a very grave one, and it was a question whether the limb could be saved. Here was a compound fracture communicating with a large joint, which had been exposed to septic influences for so many hours without even bathing with water, and fever had already set in. But, taking all points into consideration, I thought it possible to render the wound antiseptic, and if I could accomplish this I felt sanguine of a good result. With this object in view I first set the steam spray of carbolic acid playing upon and around the wound, then had the limb thoroughly washed with strong carbolic lotion from the thigh to the ankle, and for about an hour the wound was carefully and constantly syringed with carbolic lotion. Having by this means thoroughly removed all septic matters I left the wound exposed for another hour to the influence of the spray, when, having given it a final syringe, I proceeded to dress it by Mr. Lister's method, placing a piece of carbolised oil silk immediately over the wound to prevent undue irritation from the acid. By means of an antiseptic gauze bandage, applied as a figure of eight, I drew the fragments of the patella as closely together as the case would permit, covering the whole with layers of antiseptic gauze and mackintosh sheeting. A long back-splint with foot-piece was applied outside the dressing, and the limb slung in an ordinary cradle.

In the evening the patient expressed himself as feeling much easier, the pulse was more regular and not so frequent, and the temperature was rather less being 101·8°; he slept fairly well that night and the following morning the temperature had fallen to 99·6°. I again dressed the wound, using strict antiseptic precautions, found it perfectly free from the bad odour it had on admission, and looking healthy. In the evening the temperature was 99·8°, and from that time it fell to normal, never rising higher than 99°.

The antiseptic dressings were left undisturbed for a week, when they were removed under the spray, and the wound found to be completely healed. The serious compound fracture was thus reduced to a simple one, and, as stated by Dr. Maclaren, eventually a good result was obtained.

Remarks.—During the two years I was house-surgeon to the Cumberland Infirmary many grave compound fractures were admitted and excellent results followed under the antiseptic plan of treatment, which is carried out in all its details by the surgeons of that institution, but none more typically illustrates the advantages to be derived from "Listerism;" for undoubtedly this case was "going to the bad" until the septic process was arrested as above stated, and the limb, if not the patient's life, saved.

The whole case shows that, although many hours may elapse before the treatment is commenced, we need never despair of a good result, provided sufficient trouble is taken to render such a wound thoroughly aseptic, and *to keep it so* until nature has time to effect the healing process.

If this case of a wound exposed to septic influences for some time, and actually stinking, could be rendered antiseptic by care, why should not operations (without the discomforts arising from clouds of steam-spray in the operator's face, impeding his sight, &c.) be performed, and then, the operation being completed, the wound rendered antiseptic by carbolic bathing and spraying before applying Lister's dressing?

If equally good results were obtained it would, I should imagine, be advantageous to the surgeon to dispense with the spray until he had completed the whole, or at least the more delicate part of the operation; thus allowing him to see what he was about more clearly—a highly important matter in most operations.

I am, Sir, yours truly,
F. SYDNEY SMYTH, L.R.C.P., L.R.C.S. Edin.

Brockley, London, S.E.

"SCURVY AND THE PROPOSED ARCTIC EXPEDITION."

To the Editor of THE LANCET.

SIR,—In the last number of your influential journal occurs a special article on "Scurvy and the proposed Arctic Expedition," in which I, as the intended leader of such expedition, am placed before your readers in a light calculated to cause serious damage to the immediate bright prospects before us—at all events, within the range of medical influence. I beg, Sir, that, in justice to my combined arctic experience and common sense, you will at once inform your readers of the following principle relative to the prevention of scurvy to which I have undeviatingly adhered:—

1. I believe in thorough ventilation of the ship, and keeping the crew as much as possible in the open air.

2. I thoroughly believe in the constant use of lime-juice, which I should take out in the form of lozenges, after a proper test as to their efficiency, and on no account would I be without such a necessary adjunct to arctic work.

3. I place thorough faith and confidence in the liberal

supply and consumption of preserved potatoes, carrots, dried apples, preserved cranberries, pickles, and preserved vegetables generally.

4. Constant variety in diet, work, amusement, and an endeavour to instil cheerfulness and competition in the duties to be carried out, would be the great aim of,

Sir, yours obediently,

JOHN P. CHEYNE, R. Commander R.N.

Central Arctic Committee-room, Fleet-street, March 11th, 1880.

P.S.—I did say at the Mansion House meeting that the seeds of scurvy were in the constitutions of the men of the last expedition before they started on their spring sledging work, but no one, in the whole course of my lectures through the country, ever heard me disparage the use—aye, the generous use—of lime-juice. I think, Sir, under the circumstances, you might not only publish this letter, but remedy the injury done inadvertently by writing another special article calling prompt attention to the antiscorbutic principles held by me, and assuring your readers that no guarantee or written pledge will be required from me to administer health-giving diet to my crew.

PARIS.

(From our own Correspondent.)

THE proposal to create a chair for M. Cornil is likely to meet with further opposition. Should the project be realised, the new Professor of Practical Morbid Anatomy will be placed in possession of the laboratory of the Hôtel Dieu; and this arrangement will be anything but satisfactory to the clinical professors, to whom it now belongs. As, however, the Minister of Public Instruction is determined that the heavy outlay of public money incurred in the construction and fittings of this laboratory shall be justified in the future by more work than has hitherto been forthcoming, a deaf ear will most probably be turned to all remonstrance; and unless M. Ferry disappears from the Ministry with his Article 7, M. Cornil's appointment to the chair and laboratory will be a *fait accompli*.

The new building of the Clinique d'Accouchements, which is near the Observatory, is now finished, and will soon be ready to receive patients. The first-floor is occupied by the wards and their dependencies, closets, offices, and bath-rooms. One of these, the salle d'accouchement, is specially reserved for women in labour, upon the termination of which they will be wheeled back again to their beds. Separate wards for contagious cases, together with the lecture theatre, museum, and laboratory, are upon the same flat. Every means has been taken to render the wards capable of rapid and thorough disinfection in case of epidemic, the walls and ceiling being of stucco, with rounded angles, and the floor of marble mosaic. This Clinique will be a great boon to the necessitous poor, but it is to be hoped also that greater facilities for study will be afforded than have hitherto been provided. Practical instruction in midwifery has been most difficult of attainment, and many a doctor has issued from the Faculty of Paris who never attended a woman in her confinement.

The death is announced of Dr. Auzoux, the manufacturer of anatomical models of a special kind, to which he had applied the name of Clastic. The Academy of Medicine and the Institute awarded him prizes as long ago as 1822, and since that time his work has generally obtained a medal whenever exhibited. The well-known surgeon, M. Léon Labbé, was nominated a member of the Academy of Medicine yesterday, in spite of strenuous opposition from some of the leaders of the profession, whose motives may be perhaps readily guessed.

The cancer curer, "Dr." Von Schmidt, has been fined 1000 francs for illegally practising medicine, he not being able to produce any diploma whatever.

Paris, March 17th, 1880.

NICHOLLS'S HOSPITAL, Ardwick, which has been erected at a cost of about £20,000 by the widow of the late Alderman Nicholls, is now rapidly approaching completion, and is expected to be ready early in the ensuing summer.

Obituary.

GEORGE DALLAS BAIRD, F.R.C.S. EDIN.

THE subject of this notice, whose death took place on the 17th ult., in his seventy-third year, succeeded to his father's practice when only twenty-one, and for forty years was the principal medical practitioner in a wide district surrounding Linlithgow. Associating Dr. George Hunter with him as partner, Mr. Baird, after five years, retired from active work in his profession, retaining only a few of his old patients. Twelve months ago he was stricken with paralysis, since which time his general health had gradually failed. Though Mr. Baird was appointed Justice of the Peace, the excitement of municipal or political life was distasteful to him, and he is said to have refrained from voting at all elections of either character. He enjoyed the personal friendship of some of the leading members of the profession in Scotland, both of the present and past generations, and his death is lamented by a wide circle of friends.

LLEWELLYN POWELL, M.D. HEID., L.R.C.P., M.R.C.S.

DR. LLEWELLYN POWELL died on October 4th, 1879, at Christchurch, New Zealand. He was educated at the City of London School and at St. Bartholomew's Hospital, where he took a high place in the school examinations. He subsequently settled in Christchurch; his health, however, never permitted him to take a very active part in general practice, though as a consultant no man in the town enjoyed so large a share of the confidence of his medical brethren, not only on account of the soundness of his judgment and professional opinions, but because of his strictly upright and honourable conduct. Outside of his purely professional sphere he was well known as a man of refined and cultivated taste, and of extensive reading. He was an ardent student of natural science, and was for some time president of the Philosophical Society of Canterbury, to which he contributed several valuable papers. He was Lecturer on Botany and Zoology at Canterbury College, and medical officer to the Local Board of Health. His early death will be sincerely regretted by the Christchurch public, and to not a few of the profession his loss will be like that of a brother.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the last meeting of the Council, James Henry Gramshaw, M.D. St. Andrews (of Gravesend), was elected a Fellow of the College. His diploma of membership bears date December, 1842.—Mr. Christopher Heath has been elected Chairman of the Board of Examiners in Anatomy and Physiology.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on March 11th:—

Deane, Edwin, Wincanton.
Puddicombe, Wm. Noble, Purcells, Edgware.
Studer, Benjamin, Linthal, Alsace.

The following gentlemen on the same day passed the Primary Professional Examination:—

William Astley Cooper, Fredk. William Harvey, Philip Alex. Dewar Head, London Hospital; William Rees Williams, St. George's Hospital.

Staff-Surgeon T. Conry and Surgeon C. W. Magrane have been appointed to the *Flora* for service at Ascension.

His Grace the Duke of Devonshire has been elected President of the Chesterfield and North Derbyshire Hospital and Dispensary for the ensuing year.

The salary of Dr. Vallance, medical officer to the West Ham Union Workhouse, has been increased from £200 to £300 per annum.

DR. A. VANS DUNLOP, of Edinburgh, who died last month, has left £70,000 to the University of Edinburgh.

THE LADIES' CHARITY AND LYING-IN HOSPITAL, LIVERPOOL.—The annual meeting of the friends and supporters of the Ladies' Charity and Lying-in Hospital, Myrtle-street, was held on Tuesday last at the Town-hall, the Deputy-Mayor (Mr. Alderman Livingston) in the chair. The report stated there had been an increase of 396 in the number of out-door cases. Out of 2224 confinements, only two fatal cases had arisen. The attendance of nurses and midwives at the instructions continued to form a special feature. During the year 33 women had attended the courses of instruction, and had passed examinations held by the medical department. A question arose as to the advisability of relaxing the rule which limits the benefits of the charity to patients having marriage certificates, but the suggestion to this effect was not accepted by the meeting.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—The annual report of this institution has just been issued. It states that every source of voluntary income—so-called—has been reduced, and while there is a slight set-off by the increase in the item of interest there is a diminution of £203 from the income of the previous year. The Hospital Saturday and the Hospital Sunday collections are both less than last year; the amount of the former is £1921 as against £2001 in 1878; the latter is only £778, instead of £915, the amount received the year before. The total receipts, excluding legacies, are £6781; expenditure, £6652 1*s.* 5*d.*, leaving a balance to be carried forward of £128 18*s.* 7*d.* The legacies have amounted to £1158 13*s.* The alterations in the laundry and washhouse are now completed, and this department is placed in a thorough state of efficiency, giving every satisfaction.

A SUBSTITUTE FOR LEAD AND BRONZE.—At the ordinary meeting of the Society of Arts on the 11th inst. Dr. Granville Cole described a new metallic compound, known as Spence's metal, which it is expected will be largely used as a substitute for lead and bronze. It is a combination of lead, iron, and zinc sulphides, and is about one-fourth the cost of lead, and consequently much cheaper than bronze. Its melting point is comparatively low, a temperature of 100° above the boiling point of water being sufficient to reduce it to the liquid state. Like type metal, it expands on cooling; it is capable of a very high polish; further, it is claimed that it will resist climatic influences well, and that it is scarcely attacked by the strongest acids. Sanitarily it will be useful, since water has no action on it, for cisterns instead of lead; and further, being an almost non-conductor of cold, the lining of pipes with it would prevent water from freezing.

BEQUESTS ETC. TO MEDICAL CHARITIES.—The Eastern Counties Asylum for Idiots, Colchester, has become entitled to £1500 under the will of Miss Mary Woodward, of Sproughton, near Ipswich. The Grocers' Company have given £100 to the Royal National Hospital for Consumption and Diseases of the Chest at Ventnor, £50 to the Central London Throat and Ear Hospital, £50 to the Lock Hospital, and £50 to the National Truss Society. Mr. F. Wise has given £5000 to the Home for Protestant Incurables, Cork; the Belfast Royal Hospital has received £50 from Mr. James Craig, and a similar amount from Mr. Braddell. Mr. Robert Donne, of Odcombe, bequeathed £100 each to the Taunton and Somerset Hospital, the Sherborne Hospital, the Yeovil Hospital, and the Crewkerne Hospital, after the death of his wife. The York County Hospital has become entitled to £100 under the will of Mr. George Dodsworth. The Hereford Dispensary has received £100 under the will of Mrs. John Prince, of Newton.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning, at the latest.*

ALLEN, A., M.D., M.Ch., L.M., has been appointed Medical Officer for the Keelby District of the Caistor Union.

BAYNES, Mr. J., jun., has been reappointed Analyst for the Borough of Kingston-upon-Hull, for one year.

BENSON, A. H., M.B., has been appointed Lecturer on Ophthalmic and Aural Surgery in the Ledwich School of Medicine, vice Rainsford, deceased.

BOULTER, Mr. W., has been appointed Assistant Medical Officer at the Woolwich Union Infirmary.

BUTLER, P., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Assistant Medical Officer at the Workhouse and Infirmary, Camberwell.

CROWE, J. W., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer for the Workhouse and the Hartlepool District of the Hartlepool Union, vice Moore, resigned.

DOYLE, G. W., M.B., has been appointed Medical Officer to the Fifth District of the Norwich Union, vice Woodhouse, resigned.

GABBETT, H. C., M.B., L.R.C.S.I., L.K.Q.C.P.I., has been appointed Assistant Physician to the Royal Hospital for Diseases of the Chest, City-road.

GILL, J., M.D., L.R.C.P.Ed., has been appointed one of the Honorary Surgeons to the Stratford-upon-Avon Infirmary (not "Physician," as reported last week).

GOSSETT, G., M.B., has been appointed Public Vaccinator for District No. 3 of the Abingdon Union, vice Daly, resigned.

HOLLIS, A., M.D., M.R.C.S.E., L.S.A.L., has been reappointed Medical Officer of Health for Yarmouth, Isle of Wight.

HURST, G., B.A., M.B., &c., has been appointed House-Physician to the General Lying-in Hospital, London.

HUTCHINSON, J., F.R.C.S.E., has been appointed Consulting Surgeon to the Royal Hospital for Diseases of the Chest, City-road.

KEHOE, M., L.R.C.S.I., has been appointed Surgeon to St. Vincent's Hospital, Dublin, vice O'Leary, deceased.

MACASKIE, J. G., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer to the Eastern District of the Belford Union, vice Burman, resigned.

MACKENZIE, J. A., M.B., C.M., has been appointed Medical Officer to the Dispensary for Sick Children, Garside-street, Manchester, vice Powell, resigned.

NEDWILL, C., M.D., M.R.C.S.E., has been appointed Medical Officer to the Local Board of Health, Christchurch, New Zealand, vice Powell, deceased. Salary £250 per annum.

NORTHEY, W. C., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the Tavistock District and the Workhouse of the Tavistock Union.

O'MULLANE, E. J., M.K.Q.C.P.I., L.M., & L.R.C.S.Ed., has been appointed Medical Referee to the Liverpool Victoria Legal Friendly Society at Nottingham.

REVELL, R. C., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the Fifth District of the St. German's Union.

ROBINSON, J. W., M.D., M.R.C.S.E., has been appointed Medical Officer of the Old Prince's-road Workhouse, Lambeth.

SCOTT, W. E., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer and Public Vaccinator to the Second and Eleventh Districts of the Lincoln Union, vice Wilkinson, resigned.

SMITH, P. B., M.D., C.M., has been appointed Medical Officer to the Tailor Incorporation, Aberdeen, vice Fiddes, deceased.

WHITE, W. H., M.D., M.Ch., L.K.Q.C.P.I., has been appointed Assistant-Physician to the Royal Hospital for Diseases of the Chest, City-road.

WILLES, W., M.R.C.S.E., L.R.C.P.Ed., has been appointed Resident Surgeon to the Royal Sea-bathing Infirmary, vice Musgrave, resigned.

WOOD, Mr. W. W., has been appointed Analyst for the Borough of Halifax. 10*s.* 6*d.* for each analysis.

WORGER, T. H., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the Killmersdon District of the Frome Union.

WRIGHT, W. H., L.K.Q.C.P.I., L.M., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator to the Normanton District of the Shardlow Union, vice Brady, resigned.

Births, Marriages, and Deaths.

BIRTHS.

BANHAM.—On the 12th inst., at Mount View, Glossop-road, Sheffield, the wife of H. French Banham, M.A., M.B., of a son.

DOMVILLE.—On the 6th inst., at St. David's-hill, Exeter, the wife of Edward J. Domville, L.R.C.P.I. &c., of a son.

WIGHT.—On the 3rd inst., at Liverpool-road, the wife of George Wight, M.B., of a son.

MARRIAGES.

DUKE—CARDINALL.—On the 3rd inst., at St. Barnabas', South Lambeth, William Alexander Duke, Surgeon, Army Medical Department, to Edith, youngest daughter of the late J. Cardinall, of Halstead, Essex.

EVANS—BARMESTER.—On the 11th inst., at the Parish Church of Little Oakley, Essex, Samuel Evans, L.R.C.P.I., M.R.C.S., &c., of Harwich, to Eleanor Sophia, elder daughter of the Rev. George Barmester, Rector of Little Oakley.

HIND—DENTON.—On the 11th inst., at Holy Trinity Church, Stockton-on-Tees, by the Rev. Canon Falconer, Henry Hind, F.R.C.S., to Emily, sixth daughter of the late Jno. P. Denton, J.P., of Norton House, Stockton-on-Tees.

DEATHS.

BELL.—On the 13th inst., at The Wakes, Selborne, Thomas Bell, F.R.C.S., F.R.S., aged 88.

CRACKLE.—On the 9th inst., at Ilkeston, Derbyshire, Thomas Arthur Crackle, M.R.C.S.E., aged 31.

DAVIES.—On the 11th inst., at The Court, Merthyr Tydvil, Edward Davies, M.R.C.S.E., J.P. for Glamorgan and Brecknock, in his 78th year.

GOOLDEN.—On the 10th inst., Richard Henry Goolden, M.D. Oxon., F.R.C.P., of 1, Sussex-gardens, Hyde-park, formerly Physician to H.M.S. *Dreadnought* and St. Thomas's Hospital.

MIMPRISS.—On the 14th inst., at his residence, Wandsworth-road, Thomas Roberts Mimpriss, M.R.C.S.E., in his 85th year.

SMITH.—On the 5th inst., at The Wigfields, Hanslope, James Smith, M.B., C.M., aged 23.

N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

METEOROLOGICAL READINGS.

(Taken daily at 8 a.m. by Steward's Instruments.)

THE LANCET OFFICE, March 18th, 1880.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Max. Temp Shade	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Mar. 12	29·40	E.	44	42	73	53	40	..	Overcast
,, 13	30·32	N.E.	47	45	79	59	42	..	Hazy
,, 14	30·29	E.N.E	42	41	70	60	40	..	Overcast
,, 15	30·27	E.	43	40	56	48	37	..	Overcast
,, 16	30·12	N.E.	40	38	65	49	36	..	Overcast
,, 17	29·14	S.E.	41	41	83	51	34	..	Overcast
,, 18	30·33	E.	43	40	84	54	36	..	Overcast

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Local papers containing reports or news-paragraphs should be marked.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

Lectures, original articles, and reports should be written on one side only of the paper.

We cannot prescribe, or recommend practitioners.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

NON-SUSCEPTIBILITY TO VACCINATION.

H. M.—Section 29 of the Vaccination Act of 1867 provides that "If any public vaccinator or medical practitioner shall find that a child whom he has *three times* unsuccessfully vaccinated is insusceptible of successful vaccination,.... he *shall* deliver to the parent or other person [having custody of the child] a certificate under his hand [testifying to the fact, and according to a form appointed], and the parent or such person as aforesaid shall not thenceforth be required to cause the child to be vaccinated." It would appear from this section that the Legislature regarded three unsuccessful attempts at vaccination as reasonable ground for looking upon the child operated upon as insusceptible; but in our correspondent's case the operator appears to look upon his failures as depending upon the method of his operating rather than upon the insusceptibility of the child. Be this as it may, our correspondent is not exempted from having his child again vaccinated until he holds the medical certificate of insusceptibility. We would strongly advise, in the child's interest, that it should be taken to one of the public vaccination stations, where the quality of the lymph and the efficiency of the operation can be equally assured, and the question of the susceptibility or non-susceptibility put beyond doubt.

Mr. A. Perkins.—We regret that we cannot find space for the tariff.

ALOPECIA.

To the Editor of THE LANCET.

SIR,—"W." might try hypodermic injections of some salt of pilocarpine. I am unable to give an exact reference; but two cases were reported in Germany last year, in which the use of this substance subcutaneously for another purpose was followed by a growth of hair. The hydrochlorate and the nitrate are both freely soluble in water, and their introduction beneath the skin is free from objection. I generally inject one centigramme, but this dose may be doubled if expedient. When this treatment has failed, as it most probably will, "W." might rub his patient's cheeks daily with a raw onion. A friend of mine, who is most learned in the preparation and use of "simples," assures me that this is positively infallible; and, although I am rather inclined to be sceptical, I find that some of the most venerable medical writers, from Dioscorides to the present time, recommend the same application with confidence.

Yours &c.,

March, 1880. X.

Mr. F. Heeley, (Stoke Devonport.)—Our correspondent may rest assured that "gas-flames" will not cause "typhoid"; but if he be wise he will consult the medical officer of health concerning his school-room.

Non-professional should consult a surgeon.

AN OBLIVED UTERUS.

DR. J. T. WILLIAMS, Professor of Anatomy, Central University, Louisville, describes, in the *Medical Herald*, a curiosity he found in the dissecting-room. In the abdomen of the body of a negro woman, probably between sixty-five and seventy years of age, a tumour was discovered, occupying the lower zone of that cavity. It was surrounded by a quantity of loose material, in which were fifteen or twenty fibroids, varying in size from a guinea-fowl's egg to a pea. The tumour was hard and pear-shaped. On tearing open the mass longitudinally, it was seen to contain a perfectly preserved and well-formed child, apparently at full term, the breech presenting. Owing to the firm union between the fœtus and the inner surface of the envelope, it was impossible to separate the two without destroying both. On microscopic examination, the covering was ascertained to consist of *bone*. Dr. Williams concludes, from the shape of the bony envelope, the nature of its contents, its position in the pelvis, its relation to the vagina, the presence of the fibroids, and the failure to find anything else corresponding to a womb, that this was an example of ossification of the uterus.

W. P.—It must be destroyed, and the marks must be indelible.

PROFESSIONAL CONTINGENCIES AFLOAT.

To the Editor of THE LANCET.

SIR,—Perhaps some of your subscribers may care to hear what they are subject to when acting as ship-surgeons.

After a slight attack of hæmoptysis, I decided to leave England for the fourth time for Australia, and for this purpose was appointed surgeon of a vessel bound for Sydney. When, however, we were 10° south of the equator the ship took fire, and all had to leave her in the boats. I was appointed to the charge of the captain's gig, and, for a crew, had two foreign seamen, an American stowaway, the stock-keeper, the second cabin steward, one saloon and one second cabin passenger (the latter an epileptic). We had a compass that would not act, and a good supply of provisions, excepting that most important for the tropics—water. The reason of this was that we had nothing to carry it in except ale-bottles, coffee-tins, &c. We had no sails nor masts, excepting those we made from sheets and oars. Several boats were worse supplied than we were, for they had no rudders. In strange contrast to our boat was the one selected by the chief officer. His was the whale-boat—a strong, new one, better adapted to carry twelve than our cockle-shell (intended for harbour use only) was to carry eight. His crew consisted of seven—the boatswain, the boatswain's mate, two English sailors, one French sailor, the second steward, and one saloon passenger. He had a twenty-eight gallon keg of water, a good compass, a chronometer, and a sextant. The carpenter knew less of navigation than I did; but yet I saw a female passenger in his boat. We parted company, and started for Pernambuco, 500 miles distant. Fortunately we were all saved. Our boat was picked up by an Italian barque bound for Monte Video. Nothing could have exceeded the kindness and attention of the Italian captain; he gave us the best he had, and spared no pains to make us as comfortable as he could. After our arrival in Monte Video we presented ourselves to the British Consul, who provided *deck* passages for the whole of us in the *Sorata*, one of the Pacific Steam Navigation Company's vessels. I had no change of clothes; with the exception of those I was wearing, I had lost all I had. I was told the Consul would give me none, so that what I had already worn for three weeks I had the prospect of wearing for another four. The idea of a deck passage up channel in the dead of the English winter, without proper clothing, was not encouraging to one with a delicate chest. I tried hard to get employment in Monte Video, but failed. English medical men have to pass an examination in Spanish before the local practitioner, unscrupulously bigoted against competition. I was obliged to join the *Sorata*. The captain behaved well to me, and gave me a cabin in the second class, where I was very comfortable. Fortunately for me the steamer called at Rio de Janeiro, and here again I tried hard to obtain employment. I made the acquaintance of two English medical men, but they could give me nothing to do. At last I met an English ship-chandler, Mr. Wm. Trout, of the Rua Primero de Março. I explained my circumstances to him, and found him the "Good Samaritan." He gave me clothes, and provided a passage for me in a little brig of 154 tons, bound for the Cape of Good Hope. After a passage of three weeks I arrived in Cape Town. I applied to Dr. Lansburg, the Secretary of the Local Medical Board; but he only advised me to return to England. I tried hard to get something to do as an assistant or locum tenens, but failed; there was literally nothing to be done, and I could get no help from the medical men to whom I had applied. There was a district surgeoncy, of the yearly value of £75, vacant at an out-of-the-way place called Peddie; but I had not the means of getting there. I could not even get the advance of a month's salary to pay my fare there. At last I went to Dr. Kitching, a graduate of London, a homœopath. I had been as sarcastic against homœopathy as most allopaths are; but Dr. Kitching behaved kindly to me from the first, although I told him of the difference of our opinions. He took me into his house, and provided me with the means for commencing practice. He treated me as a medical man. I was on the verge of starvation when I applied to him, and I have to thank him and Mr. Trout, of Rio de Janeiro, for the position I have since succeeded in making.

Yours &c.,

ARTHUR B. VANES, L.R.C.P.E., &c.

Uitenhage, Cape Colony, Dec. 17th, 1879.

CASUAL WARDS IN PARIS.

A CORRESPONDENT writes:—While in 1878 all the world was flocking to Paris to participate in the gaieties of the great Exhibition, I noticed a modest work, begun in June of that year, in the rue de Tocqueville, a very poor quarter of the capital. This was the opening, by private initiative, of a casual ward, where a night's rest and a good bed are offered, without distinction of race or creed, to any man in absolute distress. In exchange he is required to give every particular concerning himself, and to be perfectly sober, and, though not necessarily to participate in, still to observe a decorous attitude during, the brief reading of prayers. It would require too much space to relate at length the wonderful and rapid progress of this institution. The poor readily availed themselves of the help offered, and with equal promptitude the rich came forward with the necessary means. Three casual wards now exist in Paris—the one at the opening of which I assisted, another at 14, Boulevard de Vaugirard, and the third at 81, Boulevard Voltaire. During the recent fearful winter, which has caused so much havoc among the poor of Paris, these institutions rendered the greatest service. They gave warmth and shelter to 19,412 men for an average of three nights each. To these were distributed 11,528 tickets for bread, and 16,663 tickets for animal food. Letters were written to the friends of the distressed, passports and legal papers procured, and, better still, employment of a permanent nature was found for 2116 of men relieved. When the hospitals were so overcrowded that the doors had to be shut upon the sick, room was found for some of the latter in these private casual wards. No less than 1936 foreigners were assisted, of which I am glad to note only 45 were Englishmen. The foreign nations that provided the greatest proportion of destitution in Paris were the Belgians, 655; the Swiss, 412; the Germans, 259; and the Italians, 254. I need scarcely point out that the timely and prudent assistance given by this institution must contribute considerably to the maintenance of public health. A good bed in a comparatively wholesome ward is provided, and sometimes a little bread or soup sufficient to preserve health, while every possible assistance is afforded for the procuring of work. Money is not given, and care is taken not to encourage pauperism, while seeking to prevent absolute and dangerous misery. Already the towns of Lyons, Lille, Bordeaux, Montpellier, and Béziers are preparing to follow the example set in Paris. From Vienna and from Pesth demands for information have been received, and M. Rubens, the chief of the Stockholm police, has been sent by his Government to Paris to report on this institution. On the other hand, one of its leading promoters, M. le Comte de Cars, recently visited London, and, aided by Dr. Bridges, of the Local Government Board, inquired into the condition and administration of English workhouses and casual wards. This latter incident is, perhaps, destined to bring about one of the most fruitful results of the work. The French would have much to gain if they studied the sanitary advantages of our charitable institutions; while we should be equally benefited if we could import from France the economy with which their charities are managed, the tact and gentleness that direct their distribution, and prevent the pauper losing all sense of personal dignity.

Dr. B. B. Joll, (St. Ives.)—The usual fee is one guinea for evidence, and one for a post-mortem examination. It is not customary to give "refreshers."

Mr. John Crerar.—The Bill in question did not become law.

INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—I see by THE LANCET that to-day (9th of February) the examination of candidates for the Army and Indian Medical Services begins, and it is that which prompts me to send you this communication, late though it may be, in the hope of attracting the attention of those about joining the latter service, and opening their eyes to what they are coming to, as probably not one of them knows anything of the vital changes that are about to take place in India as regards the Indian Medical Service at the present moment, and it certainly is a kindness to undeceive them if they do not.

An order of Government, which is cut and dry, and merely waiting for the 1st of April to put into force, deprives the Indian Service in each of the three Presidencies of its surgeon-general as derived from the local service, and places at the head of the services, British and Indian combined, so far as the military portion of the latter is concerned, an officer of the Army Medical Department; so that successful candidates for the Indian Medical Department need never expect to be able to rise to the head of their own department, but may look forward to serving under one of their contemporaries of the Army Medical Department some day, if they both live long enough, no matter what their relative qualifications may be; for the fact of belonging to the Indian Service is, apparently, in itself a disqualification for the post of a surgeon-general in India, no matter what assertions are made to the contrary; as, if it were intended to be otherwise, the three surgeons-general of the Indian Medical Department would not be wiped out at one stroke, and Army Medical Department men put in instead. Two, or at least one, of them would have been retained or selected from the local service; but it is not so.

This action of Government is not alone directly injurious to the Indian Service by abolishing an appointment the position and emoluments of which would incite men to work and strive and hope for some day; but it is insulting, as the practical assumption is, say what one may, that the Indian Medical Service is incapable of producing a man fit to be put at the head of a department where he would have to deal with European troops, and it at once reduces the Indian Medical Service to a subordinate and no longer independent position, and one which a man could not have the same pride as hitherto in belonging to.

Again, as regards deputy surgeons-general of the Indian Medical Department, out of a total of 21 in the three Presidencies, the number is now reduced to 12—viz., 6 in Bengal, 4 in Madras, and 2 in Bombay, so that the number of officers of the Indian Medical Department who can reasonably hope to reach this grade is very small indeed; and here again, with the more rapid promotion in the Army Medical Service, and the greater number of appointments in this grade available both at home and abroad, they must expect to be passed over, and serve under their contemporaries or juniors of the sister service.

There is another point in connexion with these abolitions and reductions, and that is the increased pensions attached to service in the grades of surgeon and deputy surgeon-general go, of course, too.

Again, as to retiring pensions, the contrast between the two services is striking and painful. The Indian Medical Department man, who has to serve all his time abroad and in the tropics, has a smaller retiring pension after twenty years' service and upwards than he of the Army Medical Department, who may have served a great portion of his time at home, or at all events in non-tropical countries. A glance at the scale of pensions laid down in the Memorandum supplied from the India Office and at that laid down for the Army Medical Department by the late Warrant will prove this at once.

Further, the recent Warrant grants certain privileges to officers of the Army Medical Department as regards leave, and that on full pay and counting as service *at home;* whilst for those of the Indian Medical Department the hard-and-fast furlough regulations remain unaltered. Service at home or in non-tropical countries and service in India are two very different things indeed, and more especially when after a time the climate begins to tell on a man, and he may have exhausted his furlough allowance, and cannot again get a change except with diminished pay and loss of service. It is then, if not indeed before, that he envies his brother of the Army Medical Department, who can go home after his tour of *foreign* service, serve at home, and perhaps ultimately come out to rule the other.

I do not mean for a moment to say that the late Army Medical Warrant erred on the side of liberality, for it did not; and, granting that, the contrast between the way the two departments are being treated is very marked indeed.

The arrangements regarding the civil portion of the Indian Medical Service have not as yet been revealed; but it is understood that they will be put under a lieutenant-governor or chief secretary to Government, with a medical secretary or some such thing, so that little or no promotion will be the result. Even were it otherwise, the slur put upon the local service by abolishing their surgeons-general ought to be removed.

The senior officers of the Indian Medical Department have, it is understood, legal redress under what is known as the Henley Clause of an Act of Parliament passed in 1858, when the service was transferred to the Crown; but the juniors have none, except what prescriptive rights and fair and equitable treatment on the part of Government give them. The former ought to have compensation for the immediate loss of promotion &c. in the shape of increased pension or bonuses on retiring, and the juniors ought to have something done for them, too, to compensate them for their prospective loss of promotion and present loss of status; for such it really comes to, I regret to say.

There ought to be no difficulty in completely amalgamating the junior portion of the Indian with that of the Army Medical Department; there is no fund to stand in the way now, and they could be placed on a roster according to their respective marks when passing out of Netley. Some such arrangement would seem fair, and would probably not be unacceptable to both. There probably would be a certain number of the Indian medical officers who would elect to remain civil; but that would create no difficulty, as a civil medical service in India there must be from the nature of things, and it could be dealt with separately.

If Government is really going to do anything for the Indian medical officers—viz., to improve their wretched rate of pensions, and restore their confidence and pride in their department—they ought to do so at once, so as to remove the painful state of suspense they are labouring under at present.

Your obedient servant,

Feb. 9th, 1880. DECCAN.

MEDICAL CHARGES.

L.R.C.P. Lond.—We agree with our correspondent. It is related of an eminent painter—Vernet, we believe—that on one occasion, being asked to produce a small pencil sketch, he did so while the applicant was waiting. When the latter protested against the price charged, the painter replied, "Do you think I spent but ten minutes in drawing that sketch? It represents the labour of thirty years."

Mr. J. Frank.—Austin Flint's work, published by Churchill, would probably answer the purpose.

M. F. Smith had better perhaps urge the need of a consultation.

THE LATE PROFESSOR J. AITKEN MEIGS.

THE Board of Trustees of the Jefferson Medical College have placed on record the following note of the characteristics of the late Professor of the Institute of Medicine. We quote from the *College and Clinical Record*:—

"In the lecture-room Professor Meigs appeared to his best advantage. Deeply interested in his subject himself, he spared no pains to make his lectures attractive to his students by careful preparation and abundant illustration. His use of the stereopticon as a means of explaining his subject was extremely fortunate. His lectures delivered a year ago, upon the Eye and Ear, will long be remembered by those who heard them for their faithful representation of the latest contributions to the anatomy and physiology of these organs: they probably have never been excelled in this country. This winter he began his lectures with the subject of 'Reproduction,' and it gave promise of being an unusually brilliant course. When lecturing he was nervous and animated; he made no effort at oratorical display, but kept ever before him the idea simply of communicating information; his style was therefore plain and unpretending, though not unpolished; he possessed a free flow of language, but was cautious in expressing his views upon facts which he considered not fully established. Always affable and sympathetic in his manner, naturally kind and obliging in his disposition, ever ready to answer questions and freely communicate the results of his laborious studies, he was not only regarded as a friend by the students, but possessed the confidence and regard of his colleagues and the profession and community at large."

Mr. D. Holmes.—The regulations have been considered once at a meeting of the Fellows of the College, and will have to be passed at two future meetings.

IS JAGGARY AN ANTISCORBUTIC?

To the Editor of THE LANCET.

SIR,—Surgeon Cullimore, in your issue of Jan. 31st, calls attention to "the preventive and remedial effects of molasses in scurvy." As one who has done a fair amount of work in the same field as that which appears to have afforded your correspondent an experience of so marvellous a description, may I be permitted to remark on certain points of the arguments advanced by him which appear to my mind to weaken the assumption made?

Is one to conclude from Surgeon Cullimore's prefatory remarks that he has reverted to the ancient and exploded theory that "sea influences and salt provisions" *per se* are causative of scurvy? If not, whence the necessity of the statement that "the very bullocks died from want of *it* owing to the heavy salt tax" (I presume the word *it* refers to "salt," although it would be difficult to understand it to do so otherwise than from the context)? Now, I would ask whether it is not within the bounds of possibility that absence of sufficient pasturage and, occasionally, of water-supply were the proximate causes of the heavy mortality amongst bullocks which undoubtedly occurred? Again, why need he seriously ascribe the occurrence of scurvy in human beings as due "to the effects of *roots*, nuts, wild aloes, *prickly pear*, and such inedible matters"? Whence the necessity for this new theory? Is it not possible that the proximate cause of disease was the absence of sufficient vegetables and fruit in the diet of the famine stricken, depriving them of that class of salts whose acids form carbonates in the system (Parkes)? That scurvy was not due to starvation in its usually accepted sense (the remaining alternative given by him) may be inferred from the fact that I have known European officers suffer severely from the disease, resulting from absence of vegetable diet, when on tour through a district where the drought had been excessive, although they did not lack other articles of diet; secondly, from similar imperfect supply, I have seen natives monetarily in a position which would have removed them from the possibility of being famine subjects, fall victims to scurvy; thirdly, in one district in which I served, where drought was barely felt, and vegetation was therefore in fair condition—famine existing only on account of prices of grain, which necessarily ranged throughout the country,—scurvy was known only in cases imported from other districts. In short, the causation of scurvy in the Madras famine formed no exception to that found under other circumstances by hosts of observers on sea or land.

Much confusion as to the subject of starvation would be saved if the following simple plan were adhered to—namely, of regarding the term "simple starvation," divisible into an acute and chronic form, as applicable to those cases in which, from the symptoms displayed, there is no reason to believe that no constituent of human diet has been absent more than another, and of regarding the term "specific starvation" as applicable to those cases in which there is reason to believe healthy nutrition has been impaired as a result of absence of certain necessary constituents. Under such a classification scurvy would appear as a form of "specific starvation."

With regard to the experiments advanced by your correspondent to prove "the preventive and remedial effects of molasses in scurvy," I believe they simply demonstrate that if an addition of saccharine matter be made to a fairly good diet, fattening would be exhibited sooner than in its absence—not a very novel fact! If, however, Surgeon Cullimore really intends it to be understood that, consonant with increased weight, scorbutic symptoms may be expected to disappear, I can assure him this is far from being the case, and in this observation I by no means stand alone. I have seen wretchedly weak famine-stricken prisoners become decidedly fat and apparently well nourished after admission; yet, if these men's mouths were examined, the usual signs of scurvy were frequently found. Indeed, many of these "sleek" men ultimately fell victims to chest affections, dysentery, and gangrenous ulcers of scorbutic origin. In fact, my experience would lead me to infer that scurvy superadded to chronic starvation is a most intractable disease, and that increase of weight to even a large extent by no means justifies the supposition that the scorbutic taint is got rid of.

If the alleged antiscorbutic properties of molasses are derived from "partial acetous fermentation," why resort to a famine patient's stomach as a laboratory for its production! Would not such a process represent a mal-assimilation of saccharine matter? Would not such an occurrence precipitate intestinal affections in a patient so strongly predisposed as a famine subject? Finally, would Surgeon Cullimore guarantee to keep himself free from scurvy upon a diet of rice and dholl, with an unlimited allowance of jaggary? Until an experiment of the description is employed, I see little reason for believing that saccharine bodies are to be credited with any power beyond that of fat and heat formers. Performing such functions, it is possible, indirectly, that they may modify and ameliorate the effects of scurvy. But, as fatty bodies are ten and a half times more powerful in this respect, might not they be as usefully employed? If given as a cure for scurvy in a case *not complicated with simple starvation*, and remedial effects were ascertained, your correspondent might then, I think, with more confidence give jaggary the reputation of yielding "preventive and remedial effects in scurvy."

Your obedient servant,

Feb. 1880. A MADRAS FAMINE-WALLAH.

THE RADCLIFFE TRAVELLING FELLOWSHIP.

IN reference to our announcement last week that the decision of the examiners for the Radcliffe Travelling Fellowship in the University of Oxford had still to be confirmed by the electors, Mr. Wansbrough Jones writes to us saying that this is incorrect. The electors had ratified the examiners' decision before the result was announced.

T. N. D.—The questions have no medical bearing. We cannot deal with them.

OBSTETRIC ETHICS AND SYPHILIS.

To the Editor of THE LANCET.

SIR,—I should be glad if you will kindly express your opinion with regard to A.'s conduct in the following case:—

Mr. A. had been treating Mrs. B. for syphilis during two months previous and up to the time of her confinement. Mr. A. wrote to her husband, who did not reside with her, stating that on account of the malady she was suffering from he absolutely declined to attend her when in labour. The husband replied to say that he would find another doctor for the confinement. About a month ago Mrs. B.'s sister called upon me, and engaged me to attend Mrs. B. in her confinement, not mentioning anything with regard to her illness, or informing me that another medical man was attending her. The labour was natural, and in two days after I was informed that Mr. A. had been Mrs. B.'s doctor since she came to live in this neighbourhood, and that he would now go on with the case. Mr. A., with whom I am personally acquainted, was informed of my engagement two days previous to labour setting in, but he did not communicate with me. Now that the confinement is over, and also all risk of contagion, Mr. A. has resumed his attendance upon Mrs. B. I enclose my card. I am, Sir, yours &c.,

March 8th, 1880. C.

*** We cannot admire the part played in the above case by either Mr. A. or the patient and her friends. A. might have forewarned C., or, at the very least, have explained to the husband of the patient the duty of stating to C. the nature of the circumstances, and the dismissal which awaited him after the accouchement.—ED. L.

THE TREATMENT OF SEA-SICKNESS.

To the Editor of THE LANCET.

SIR,—As every contribution towards the treatment of *mal de mer* is generally welcomed, I beg to state the result of two years' experience, for the most part in the tropics. The best remedy I have found is a combination of small doses of bromide of potassium and hydrate of chloral taken with the citrate of magnesia during effervescence. Spirits of sulphuric ether may be added sometimes if there be much prostration. I may say that this remedy has only failed me in one case.

I am, Sir, yours &c.,

FREDERIC W. CORY,

Late Surgeon, Eastern and Australian Mail S. Co.

Buckhurst-hill, March 9th, 1880.

MEDICAL BENEVOLENT COLLEGE. — APPLICATION: MAY ELECTION.

To the Governors of the Royal Medical Benevolent College, Epsom.

HAMILTON GEORGE, AGED THIRTEEN YEARS,

Fourth son of the late George Smith Delavil Harris, L.R.C.P., who was in practice for many years at Leighton Buzzard, Beds, and died in September last, after a very sudden illness, brought on by overwork and anxiety, at the age of fifty, leaving a widow and ten children, seven of whom are very young, and entirely dependent upon her, and she is not in a position to educate them, being totally unprovided for through his sudden loss. The boy's age precludes him from more than two elections, so that your assistance is most anxiously asked for.

The case is strongly recommended by Prescott Hewett, Esq., F.R.S.; John Simon, Esq., F.R.S.; Lady Duncombe; Mrs. Arthur Flowers; Miss Cavendish; A. Macnamara, Esq.; Leopold de Rothschild; &c. &c.

*** We can strongly recommend this case as deserving the support of the Governors.—ED. L.

TYPHUS IN ST. PETERSBURG.

"PURPURIC" typhus is reported to have appeared in St. Petersburg. On the 22nd February a woman attacked with this disease was admitted into the clinic of Baron Villiers, under the care of Professor Bothine, and quickly succumbed. Shortly afterwards the children of the defunct, aged respectively twelve, nine, and three years, were admitted with the same illness. The disease next spread in the children's wards, where it was dominant at the time of the latest news. It is added that the symptoms at first differ little from measles, with which disease it may easily be confounded.

A Country Practitioner.—We must refer our correspondent to our advertising columns, or to an agent.

THE FLESH OF DISEASED ANIMALS AS FOOD.

To the Editor of THE LANCET.

SIR,—Let me ask you a question. You probably know that a very large number of animals nowadays, bullocks, sheep, and pigs, are found when killed to have unsound lungs or liver. In fact, I have been assured by butchers that it is quite the exception for them to kill an animal perfectly sound in lungs and liver. Sheep are this year largely affected by liver disease, and pigs are as largely affected by lung disease. What I would ask is: Do you suppose that mutton and pork from sheep and pigs so affected are injurious as food? Suppose that to all *appearance* the meat is good when the animal is cut up, do you suppose that the local disease (in lungs or liver) has rendered the meat unfit for food?

March 13th, 1880. Yours sincerely, FARMER.

Private R.V.—To prevent blisters, it is of the utmost importance to have a well-fitting boot, and to march in worsted socks. We can speak from personal experience of the value of soaping the socks. When the feet are tender, but the skin unbroken, sponging them with spirits in many cases does good.

CROTON LINIMENT FOR "FITS."

To the Editor of THE LANCET.

SIR,—A correspondent writes to you on Croton Liniment for Fits, and at the end of the letter wishes to know how to avoid the precipitate caused by adding liq. ferr. dialysat. to a mixture. If he makes the mixture up with "distilled water," he will find it clear.—Yours truly,

March, 1880. N.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Gowers, London; Mr. T. Smith; Mr. R. C. Lucas, London; Dr. H. Thompson, London; Dr. Squire, London; Mr. Winter, Wolverhampton; Mr. Joll, St. Ives; Mr. Thompson, Omagh; Mr. Richardson, Leamington; Mr. F. J. Gant, London; Dr. Bakewell, Rose, New Zealand; Mr. Turner; Professor J. Clay, Birmingham; Dr. Savage, Birmingham; Mr. L. Tait, Birmingham; Mr. A. Perkins, Exeter; Mr. Oliver, Manchester; Mr. Leaver, Stratford-upon-Avon; Mr. Jackson, Wolverhampton; Dr. Wheeler, London; Mr. J. Archer, Birmingham; Mr. Macaskie, Bamburgh; Mr. Clapperton, London; Mr. Tuohy, Agra; Dr. O'Neill, Shahpar; Mr. Jennings; Mr. Burroughs; Mr. Macleod, Edinburgh; Messrs. Douglas and Mason, Edinburgh; Mr. Hodgson, St. Helens; Messrs. Mayer and Meltzer, London; Commander Cheyne; Messrs. Murray and Co., Liverpool; Mr. Mears, Newcastle-on-Tyne; Mr. Forbes, Glasgow; Mr. Masterman, Ixworth; Mr. May, London; Dr. Haddon, Horncastle; Mr. Godson, Birmingham; Mr. J. Watt, Balla Hissar; Surgeon-Major Morrice; Dr. King, Fredonia, Ohio; Mr. Frank, Darlington; Mr. Marsden, London; Dr. Foster, Hitchin; Dr. Nedwill, New Zealand; Mr. Murray, Liverpool; Mr. G. F. Green, Alderton; Mr. Ashton, Gayton; Dr. Lush, Salisbury; Dr. Barrows, San Francisco; Mr. R. T. Cæsar, Shirley; Mr. G. Meadows, Hastings; Dr. Thin, London; Mr. G. Fleming, London; Mr. Hodgson, Brighton; Mr. Crowell, Tottenham; Mr. Whitefoord, London; Mr. Birchall, Liverpool; Dr. Page, Newcastle-on-Tyne; Mr. Kemp, London; Mr. Austin, London; Surgeon D. H. Cullimore; The Secretary of the Statistical Society; X.; W. F.; The Military Secretary, India Office; Non-professional; N.; A Country Practitioner; B. F. W.; M.R.C.S.; A. B. S., Eastbourne; Alpha, Birmingham; M.D., London; L.R.C.P., Stoke Newington; H. M.; W. C.; Traveller; P. J. L., Manchester; M.R.C.S., Paris; Observer; W. G. G., Liverpool; I. M. D.; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Toyne, Sheffield; Mrs. Martin, Cork; Mr. Boys, Bristol; Mr. Carter, London; Mr. Foster, Jamaica; Mr. Wheeler, Manchester; Mrs. Hymes, Frome; Mrs. Atkinson, Blackpool; Dr. Goodson, Stratford; Messrs. Clowes and Nash, Norwich; Mr. Crackle, Nottingham; Mr. Jeffreys, Chesterfield; Mr. Fernby, Snaith; Mr. Nicholson, Worsbro' Dale; Mr. Farrar, Bradford; Mr. Edwards, Faversham; Mr. Sutherland, Glasgow; Mr. Dunman, Hastings; Mr. Weddell, Dartford; Dr. Lush, Fyfield; Messrs. Isaacs and Co., London; Dr. Stewart, Nottingham; Mr. Claremont, Sheffield; J. M. G.; J. F. D., Mickleton; Delta, Dublin; Surgeon, Newcross; Doctor, Bayswater; Deltoid; M.B., Bath; Dispenser, Old Brompton; X. O., Holborn; C., Newcross; Warden; Medicus, Barking; Surgeon, Camberwell; R. A. K.; Box, Bradford; D. A. H., Newcross; Theta, Herperhoy; A. V., Smithfield, W. F. J.; X. Y. Z.; Medicus, Sheffield; D. W., Ilkrar; Dr. E. S.; &c.

York Herald, Leeds Mercury, Weekly Express, Bombay Gazette, Bristol Mercury, Liverpool Daily Post, Cambridge Chronicle, Mansfield Advertiser, Herald and Weekly Free Press, Church of England Temperance Chronicle, Students' Journal, Richmond and Twickenham Times, Surrey Advertiser, Kensington and Hammersmith Reporter, &c. &c., have been received.

Medical Diary for the ensuing Week.

Monday, March 22.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.
MEDICAL SOCIETY OF LONDON.—8½ P.M. Dr. F. de Havilland Hall, "On a Case of combined Renal and Hepatic Colic."—Mr. Samuel Benson, "On a Case of Genu Valgum Cured by Mechanical Means."—Dr. C. R. Drysdale, "On Cerebro-spinal Syphilis."

Tuesday, March 23.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—8 P.M. Mr. V. Ball, "On Nicobarese Ideographs."—Mr. Alfred Taylor, "On a New Method of expressing Degree of Changes of Specific Form in the Organic World, especially referring to the Development of the Mind and Body of Man" (illustrated by numerous Diagrams).
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8½ P.M. Dr. Pavy, "On the Estimation of Uric Acid by its reducing Action upon the Ammoniated Cupric Test."—Sir Henry Thompson will exhibit and demonstrate the "Nietze-Leiter" Endoscope on the living subject.

Wednesday, March 24.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at 1 P.M.
LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
HUNTERIAN SOCIETY.—8 P.M. Mr. Warren Tay, "On Sterno-mastoid Tumours."—Dr. Little, "On a rare form of Wry-neck and certain Pathological Changes of the Face resulting from the Deformity."

Thursday, March 25.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.

Friday, March 26.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, March 27.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

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